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National Veterinary Accreditation Program

Reference Guide



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This guide supersedes APHIS 91-55-065, "Veterinary Accreditation: A Reference Guide for Practitioners," published in February 1993 and slightly revised in August 1993.

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Introduction

Welcome to the National Veterinary Accreditation Program (NVAP). Thank you for participating in the program and becoming a U.S. Department of Agriculture (USDA) Animal and Plant Health Inspection Service (APHIS) accredited veterinarian. This reference manual is your guide to the NVAP and contains information vital to understanding and performing your responsibilities as an accredited veterinarian, including:

- Animal identification;
- Disease prevention, control, and eradication;
- Regulatory immunization;
- Regulations for intrastate, interstate, and international shipment of animals and animal byproducts; and
- Instructions on the proper selection, completion, and submission of regulatory forms.

As an accredited veterinarian, you are the first line of defense in ensuring the health of this Nation's livestock and poultry. APHIS is dependent on accredited veterinarians for carrying out many of the programs and services designed to protect public health and safeguard animal health. You and other accredited veterinarians share in a partnership with APHIS, State animal health officials, and the animal agriculture industry. The professional ethic is the basis for trust between veterinarians and their clients and also between veterinarians and their peers working in animal health and regulatory medicine.

As an accredited veterinarian, you must perform all accreditation work following State and Federal laws and regulations and approved procedures. Included in this guide are the Standards for Accredited Veterinarians from the Code of Federal Regulations (CFR) (appendix A). By agreeing to participate in the Accreditation Program, you have accepted the responsibility for knowing these and other appropriate Federal and State regulations.

It is important to be sure that all APHIS-accredited veterinarians are performing their duties in accordance with current USDA regulations. Within USDA–APHIS, Investigative and Enforcement Services (IES) provides support to all the agency's program units, including Veterinary Services (VS). IES investigators look into allegations that an accredited veterinarian did not abide by the accreditation standards as explained in this manual. Further details about IES' work and your role in the investigative process are found in the section entitled "Compliance and Regulations."

Additional questions about the program should be directed to the Federal or State field regulatory veterinarian in your area or your respective APHIS–VS Area Office listed in appendix B. Appendix C lists all State animal health officials. Current addresses can also be accessed through the Web at

<<http://www.aphis.usda.gov/vs/nvap>>.

If you have suggestions for improving this guide or the Accreditation Program in general, call (301) 734–6188 or contact us through our Web site at

<<http://www.aphis.usda.gov/vs/nvap>>. Through this Web site, you can also update information about yourself. If you move, change employment, or need to give us your e-mail address, please visit this Web site and send us your updated information so we can keep your record current.

Control and Eradication

Brucellosis

Brucellosis is a contagious, infectious, and communicable disease affecting primarily cattle, bison, and swine that is caused by bacteria of the genus *Brucella*. *Brucella abortus* affects mainly bovine species; *B. suis* affects mainly porcine species. Goats, sheep, and horses are also susceptible to *B. abortus*. A third strain, *B. melitensis*, affects mainly goats and sheep. Though *B. ovis*, which affects sheep, does exist in the United States, it does not cause significant disease problems. Currently, there is no program and no initiative to establish a program for the control of *B. ovis*.

In its principal animal hosts, brucellosis causes loss of young through spontaneous abortion or birth of weak offspring, reduced milk production, and infertility. It can affect both animals and humans. Brucellosis is transmitted from animals by direct contact with infected blood, placenta, fetuses, or uterine secretions or through the consumption of infected and raw animal products (especially milk and milk products). There is no economically feasible treatment for brucellosis in livestock.

The regulations of APHIS' Brucellosis Eradication Program vary on the basis of the brucellosis status in each State. Minimum standards are set forth in the Brucellosis Eradication Uniform Methods and Rules, a publication distributed by VS. Some States have more restrictive requirements. Check with the APHIS–VS Area Office nearest you (appendix B) for testing and vaccination policies. Contact the State or Federal animal health officials in your State to obtain all necessary forms, mailers, identification tags, and other items required for both vaccinating and testing eligible animals. (For some items, fees may apply.)

Interstate Shipment

Before testing for interstate shipment, obtain specific State regulations by contacting the State animal health official's office in the importing State. See appendix C for a list of addresses and telephone numbers of State animal health officials.

International Export

When preparing to test and certify an animal for international export, become familiar with the requirements by visiting the National Center for Import and Export, Animal Regulations Library at http://www.aphis.usda.gov/vs/import_export.htm and then contact the APHIS–VS Area Office for additional guidance.

VS Form 4–33

VS Form 4–33, Brucellosis Test Record, must be completed for each animal or each herd tested (a separate 4–33 must also be completed for each species tested). See appendix D for an example of this form and instructions for completing it. VS Form 4–33 requires that you list the reason for the test. Reasons may include export (specify the test required by the importing country), interstate movement (depends on the State of destination), sale (even local change of ownership in many States), show or fair, diagnostic assessment (such as abortion), and owner request. If infection is suspected or confirmed, regulatory officials will contact you, the owner, or both, to develop a herd plan.

VS Form 4–54

VS Form 4–54, Brucellosis Test Record—Market Cattle Testing Program, is used for brucellosis tests done as part of the Market Cattle Testing Program. That program refers to the testing of cattle and bison at markets (first point of concentration) or slaughter. See appendix D for an example of this form and instructions for completing it.

Testing

Bovine—A complete herd blood test must include all cattle or bison 6 months of age and older, except steers, spayed heifers, official Strain 19 calfhood vaccinates of the dairy breeds under 20 months of age, and official Strain 19 calfhood vaccinates of bison or beef breeds under 24 months of age. The presence of the first pair of fully erupted permanent incisor teeth is evidence that an animal has reached 24 months of age. Official Strain 19 calfhood-vaccinated cattle or bison under these ages must be included in the herd test if they are parturient (springers) or have already calved. *Note: Age-based testing requirements do not apply to RB51 vaccinates.*

Swine—A complete herd test must include all breeding swine more than 6 months of age unless they are being fed for slaughter and are not in contact with breeding swine. Vietnamese potbellied pigs are considered to be domestic swine for the purposes of disease control and eradication procedures and, as such, fall under the same regulations in Title 9 of the CFR. All tested swine must be identified with an official eartag, tattoo, or other official identification. Also see the subsection entitled “Current Animal Identification.”

Exotic Species—When dealing with exotic or nondomestic species, contact your State animal health official or APHIS–VS Area Office.

Blood Collection and Submission

Identify each animal with either an official USDA metal eartag placed in the upper middle portion of the right ear, an individual animal's registration tattoo, an official registration brand, or an individual registration number (in conjunction with an official eartag, tattoo, or brand) issued by a breed association recognized by VS. (Also see the section entitled "Current Animal Identification.") Record the eartag (identification or vaccination), registration tattoo, age (months or years), sex, and breed on VS Form 4–33. If you are working with a herd known to be, or suspected of being, infected, take proper precautions by wearing protective gloves and eyewear. Avoid direct contact with retained placenta, vaginal discharges, aborted fetuses, and other reproductive tissues because these materials are potential sources of human brucellosis.

Collect 3 to 5 mL of blood. Take appropriate precautions to prevent hemolysis by (1) sending the samples with ice packs or (2) centrifuging, pouring the serum off, and sending the serum only. (See the section entitled "Laboratory Submissions.") Because swine blood is particularly susceptible to hemolysis, take extra precautions in handling it. If you are bleeding the animal with a needle and syringe, do not extrude the sampled blood from the syringe through the needle into the test tube. This practice can cause hemolysis. Blood or serum samples should be delivered to the cooperative State or Federal laboratory as soon as possible for testing. Test results will be interpreted by State or Federal regulatory officials. You may be contacted for additional individual or herd history.

Animals Eligible for Vaccination

Vaccinate only heifer calves between the ages of 4 and 12 months. Many States have even more restrictive age requirements for vaccination. Before vaccinating any animals for brucellosis, be certain that you understand and follow your State's requirements. Adult vaccination for brucellosis is conducted by State and/or Federal officials only. If you have questions concerning this program, contact the State animal health official or the APHIS–VS Area Office nearest you.

Instructions for Vaccination

Step 1: Vaccine Handling and Administration—

1. Keep the vaccine stored properly according to label instructions.
2. Check the expiration date before using.
3. Reconstitute the vaccine following the label instructions.
4. Mix the RB51 vaccine just before using; keep it cool and out of direct sunlight.

5. Use caution. RB51 may cause clinical brucellosis in humans if accidentally injected, sprayed in the eyes, or allowed prolonged contact with the skin. If you are exposed, contact a physician as soon as possible.
6. After reconstitution, the vaccine loses potency rapidly. Do not reconstitute more vaccine than will be used in 1 hour, and, if working in warm weather, keep the vial on an ice pack to maintain viability.
7. To avoid contamination and accidental vaccine exposure to other than vaccination-eligible animals, maintain separate syringes and needles for brucellosis.
8. Administer 2 mL of the vaccine subcutaneously.

Step 2: Tattooing—

1. Clean the inside of the right ear to enhance ink penetration. Green ink works best for legibility, especially in black-pigmented ears.
2. Tattoo the ear with the appropriate coding between cartilage ribs in the middle of the ear. Allow for normal growth of the ear. If ear marks or notches do not permit this location, try to place the tattoo as near as possible to the recommended position.
3. Apply the ink with a dauber and rub the ink into the holes well with your thumb or an old toothbrush.
4. Vaccination tattoos must be applied to the right ear. For *B. abortus* Strain 19 vaccinates, the tattoo will include the U.S. Registered shield and “V,” which will be preceded by a number indicating the quarter of the year and followed by a number corresponding to the last digit of the year in which the vaccination was done. For *B. abortus* Strain RB51 vaccinates, the tattoo will include the U.S. Registered shield and “V,” which will be preceded by a letter R and followed by a number corresponding to the last digit of the year in which the vaccination was done. Documentation of brucellosis vaccination tattoo information on the VS Form 4–33 is essential for accurate test interpretation.

Step 3: Records—

1. Record the information (eartag, age in months, breed, sex, and whether purebred or grade) on VS Form 4–24, Brucellosis Calfhood Vaccination Record, or VS Form 4–26, Brucellosis Vaccination Record. (See appendix D for examples and instructions for completing these forms.)
2. Use only official USDA orange metal vaccination tags and official USDA tattoos placed in the right ear.
3. Promptly submit the vaccination records to your State program records office as instructed by your State. Many States require that records be submitted within 7 days; check with your State for specific guidelines. *Note: Animals are not considered to be official vaccinates until the State animal health official or APHIS–VS Area Office has recorded the certificate information. Timely submission of certificates is essential.*
4. On rare occasions, it may be necessary to recertify a vaccinated animal that has no tag or an illegible tattoo as having been vaccinated. Phone your State animal health official or APHIS–VS Area Office for permission and specific instructions.

Working With Infected Herds

The details of eradicating brucellosis from herds known to be infected are beyond the scope of this manual. Your State animal health official, the APHIS–VS Area Office for your State, and your local regulatory veterinarian will work with you and your client to develop a herd plan.

Tuberculosis

Bovine tuberculosis (TB) is a contagious, infectious, communicable disease of animals and humans caused by *Mycobacterium bovis*. It is commonly a chronic, debilitating disease but occasionally may assume an acute, rapidly progressive course. TB is a widespread zoonosis of global magnitude and affects nearly all species of vertebrates. Disease is spread by direct contact, inhalation of droplets expelled from infected lungs, and ingestion of contaminated feed or milk. All accredited veterinarians must report suspected or diagnosed bovine TB promptly to State or Federal animal health authorities.

Testing

Diagnosing TB in live animals depends on using an effective testing technique with an intradermal injection of tuberculin obtained through your State animal health official or APHIS–VS Area Office. Several varieties of tuberculin are produced. However, use only bovine purified protein derivative tuberculin (PPD bovis) licensed by USDA for official testing. See table 1 for tuberculin test requirements for different species of animals.

Table 1—Tuberculin test information for various animal species

Species	Dose and type	Site	Read test visually and palpate
Cattle & Bison	0.1 mL PPD bovis	Caudal fold	72 h ± 6 h
Horses	<i>Not reliable</i>		
Sheep & Goats	0.1 mL PPD bovis	Caudal fold	72 h
Swine	0.1 mL PPD bovis	Bases of each ear or vulvar lips	48 h
Poultry	0.05 mL PPD avian	Wattle	48 h
Exotic Bovidae (antelope)	0.1 mL PPD bovis	Midcervical	72 h
Deer, elk (and other Cervidae)	0.1 mL PPD bovis	Midcervical	72 h
Camelidae	0.1 mL PPD bovis	Postaxillary Region	72 h

Note: TB testing and test result interpretation for many exotic species (such as some zoo animals) are not yet developed or reliable. For interstate movement of these animals, contact the State animal health official in the State of destination for the TB-testing requirements (if any) for these species.

Because the tuberculin test is based on an immune response, the animal being tested should not concurrently be receiving other medications, vaccinations, or anthelmintic drugs. These agents may temporarily affect the immune system and influence the result of the tuberculin test. In addition, avoid tail-bleeding for other diagnostic procedures (e.g., brucellosis, Johne's disease) at the time of

tuberculin-test injection in cattle or bison because tail-bleeding may interfere with test interpretation.

Veterinarians are legally responsible for properly conducting and evaluating the results of tuberculin tests. Therefore, perform the test yourself; do not delegate the responsibility to a technician. For TB testing in species other than cattle or bison (e.g., cervidae), contact your State animal health official or APHIS–VS Area Office for additional guidance.

Instructions for Testing

Step 1: Forms—

1. Complete VS Form 6–22, Tuberculosis Test Record. (See appendix D for an example of this form and instructions for completing it.)
2. Identify the animal on the form by its official identification as outlined in the section entitled “Current Animal Identification.”

Step 2: Supplies—

1. Tuberculin. Use USDA-contract PPD bovis (see table 1). Check the expiration date to be certain that the tuberculin is still valid.
2. Syringe. Use a disposable 1- or 0.5-cc tuberculin syringe.
3. Needle. Use a 26-gauge, 3/8-inch-long needle; a larger gauge and longer or shorter needle might allow the tuberculin to leak from the injection site. Use a new needle for each injection.

Step 3: Injection of Tuberculin—Restrain the animal sufficiently to ensure an accurate intradermal tuberculin injection.

1. In cattle and bison, injections should be made about 2 to 3 inches distal to the base of the tail just inside the hairline of the caudal fold.
2. Note scars, defects, and anomalies of the skin in this area on VS Form 6–22 so that they will not be confused with possible test reactions at the time of reading.
3. Use the caudal fold on either side of the tail; however, note which side you injected.
4. Clean the area to be injected, but do not use alcohol because it may be irritating to the skin.
5. Grasp the caudal fold between the thumb and index and middle fingers to stabilize it.
6. Carefully insert the needle to its full length between the superficial layers of the skin; withdraw it slightly and deposit 0.1 mL of tuberculin.
7. A small bleb should appear in the skin at the end of the needle.

Note: It is important to establish a consistent injection technique (i.e., all animals should be injected on the same side of the tail)—particularly when testing large numbers of animals.

Step 4: Reading the Test—

1. Between 66 and 78 hours after injection (72 hours is optimum), the original tester (unless an alternative test reader has been authorized by the Area Veterinarian-in-Charge [AVIC]) must determine the results of the test by both observation and palpation of the injection site.
2. Verify the identification of the restrained animal and raise the tail to exert slight tension on the caudal fold.
3. Visually inspect the injection site closely and palpate it carefully to detect changes from the normal. Any swelling or increase in thickness of the skin is considered to be a response to the tuberculin. If there is doubt about whether a response has occurred, palpate the opposite side of the tail to determine if there is a change from normal. Any observed change should be carefully considered and recorded.
4. Test observation without palpation is unacceptable.

Step 5: Recording the Results of the Test—

1. Use VS Form 6–22.
2. Enter “N” (negative) when you observe no change in the tissue at the site of injection.
3. Enter “S” (suspect) when you observe visual swelling or any palpable increase in the thickness of the area surrounding the injection site.

Reactions and Interpreting Test Results

If an animal is exposed to the antigens present in bovine TB, a tuberculin injection results in a delayed hypersensitivity reaction manifested by swelling and induration at the injection site. A positive response usually begins within 8 to 12 hours and peaks about 72 hours after injection.

If the test produces any type of response, immediately notify your APHIS–VS Area Office and State animal health officials. The caudal-fold test is used as a presumptive diagnostic procedure, and animals classified as suspect must be evaluated further by the comparative cervical (CC) test or sent directly to slaughter under permit. Only Federal or State regulatory veterinarians who have had specialized training may conduct a CC test. The CC test must be performed within 10 days of the initial caudal-fold injection in cattle and bison, or the herd owner must wait 60 days

(90 days for cervidae) before the CC test can be administered. If the CC test indicates that the animal is a reactor, all further herd testing is conducted by Federal or State regulatory veterinarians. In most areas of the United States, a caudal-fold response rate of 3 percent or greater should be expected. Improper injection or observation techniques may result in true suspects' or reactors' being missed.

See the Bovine TB Eradication Uniform Methods and Rules for more information.

The most current version of this VS-published document is posted at

<<http://www.aphis.usda.gov/oa/pubs/bovtbumr/bovtbcontents.html>>.

Pseudorabies

Pseudorabies is a contagious, infectious, and communicable viral disease of livestock. The pig is the only natural host. However, pseudorabies virus (PRV) can infect most mammals except humans and apes. Cattle, goats, sheep, dogs, cats, and wild animals such as opossums, raccoons, rodents, and skunks are dead-end hosts that can transmit the virus, but these animals usually die 2 or 3 days after infection. Transmission of PRV can occur by direct nose-to-nose or fecal-to-oral contact. Indirect transmission can occur by inhalation of aerosolized virus or ingestion of contaminated water or feed.

In general, the virus infects the central nervous system and respiratory tract in most mammals, except humans. Young swine are very susceptible, and mortality can reach 100 percent in piglets. Weaned pigs are often clinically affected with the respiratory form of the disease. Pigs of all ages display a generalized febrile response, anorexia, and weight loss. Infected pigs remain latently infected following clinical recovery.

Because requirements for the five-stage Pseudorabies Eradication Program can vary by State, contact your APHIS–VS Area Office or State animal health official for specific testing instructions.

Interstate Shipment

If you are testing for interstate shipment, contact the State animal health official in the State of destination for specific requirements. All swine must be identified for movement in interstate commerce. Swine originating from within the same production system may be identified by lot and by record, provided that the requirements of 9 CFR Sec. 71.19 are met.

International Export

When preparing to test and certify an animal for international export, become familiar with the requirements by visiting the National Center for Import and Export, Animal Regulations Library at http://www.aphis.usda.gov/vs/import_export.htm. As an alternative, you may have the exporter or broker contact the ministry of agriculture of the importing country for specific regulations and the need for any permits. You should then contact the APHIS–VS Area Office to confirm the current requirements for the country of destination and to get additional guidance.

Vaccinating

Some States prohibit vaccination and consider vaccinated herds infected, placing them under quarantine. Check with your State animal health official or APHIS–VS Area Office before initiating any vaccination program.

Instructions for Testing

Step 1: Preparation—Because pseudorabies can be spread oropharyngeally, it is important to disinfect the snare between hogs, to leave the snare and other equipment on the farm, and to disinfect your own equipment carefully. See the section entitled “Selecting and Using Disinfectants.”

1. When a herd is tested for the Cooperative Pseudorabies Eradication Program, the State animal health official of the APHIS–VS Area Office will provide you with the appropriate sample size and selection needed for each herd.
2. The key to testing is to provide a randomly selected sample.

Step 2: Identifying Animals—

1. All test animals must be individually identified by tattoo, plastic bangle tag, or other official identification. Refer to the section entitled “Current Animal Identification” for further information.

Step 3: Collecting Blood Samples—

1. Use only clean tubes for swine blood collection.
2. Collect a minimum of 3 mL of whole blood.
3. Because swine blood hemolyzes easily, separate the serum from the clot before mailing. Most laboratories prefer at least 1 mL of serum for testing.
4. Refrigerate the sample if shipping will be delayed. Avoid shipping over a weekend.
5. The samples must be tested by an approved laboratory.

Step 4: Recording the Results of the Test—

1. Send completed forms with the samples. If your State has no standard pseudorabies test form, use VS Form 4–33, Brucellosis Test Record.
2. If the herd you are testing is using vaccine, make sure you clearly indicate the vaccine type and manufacturer on the test chart.
3. At the top of VS Form 4–33, delete brucellosis and print PSEUDORABIES; also print PSEUDORABIES in the Remarks block. Any questions should be directed to your State animal health official or APHIS–VS Area Office.

Complete the blocks of VS Form 4–33 as shown in appendix D.

Transmissible Spongiform Encephalopathies

General Introduction

Transmissible spongiform encephalopathies (TSEs) are rare forms of progressive neurodegenerative disorders that affect both humans and animals and are caused by similar uncharacterized agents that generally produce spongiform changes in the brain. Specific examples of TSEs include scrapie, which affects sheep and goats; bovine spongiform encephalopathy, which affects cattle; transmissible mink encephalopathy; feline spongiform encephalopathy; chronic wasting disease of mule deer, white-tailed deer, black-tailed deer, and elk; and, in humans, a variant form of Creutzfeldt–Jakob disease. TSEs have also been reported in Europe in captive wild ruminants, cats, and monkeys.

TSEs are insidious degenerative diseases of the central nervous system. Historically, the diagnosis of TSEs has been based on the occurrence of clinical signs of the disease, which was confirmed only by postmortem examination of brain tissue. More recently, identifying the presence of abnormal prion protein by various techniques has improved the ability to make a disease diagnosis.

A characteristic feature of all TSEs is the lack of a measurable host immune response to the agent, meaning that no antibodies are produced. No conventional serologic test can be used to identify infected animals. Scientists usually diagnose TSEs in the laboratory by histopathologic examination of the brain followed by one or more supplemental tests.

Scrapie

Scrapie is a fatal, degenerative TSE disease affecting the central nervous system of sheep and goats. First recognized as a disease of sheep in Great Britain and other countries of Western Europe more than 250 years ago, scrapie has been reported throughout the world. In the United States, scrapie has primarily been reported in the Suffolk breed. It also has been diagnosed in numerous other breeds, in several crossbreeds of sheep, and in goats. The first case of scrapie in the United States was diagnosed in 1947 in a Michigan flock. From this first case through January 2005, scrapie has been diagnosed in more than 1,295 flocks in this country. Through January 2005, about 2,678 cases in sheep and 14 cases in goats have been reported.

The agent responsible for scrapie and other TSEs is smaller than the smallest known virus and has not been completely characterized. Three main theories have been advanced on the nature of the scrapie agent: (1) the agent is a prion, an exclusively host-coded protein that is modified to a protease-resistant form after infection; (2) the agent is a virus with unusual characteristics; and (3) the agent is a virino, a small, noncoding regulatory nucleic acid coated with a host-derived protective protein.

The scrapie agent is extremely resistant to heat and to normal sterilization processes. It does not evoke any detectable immune response or inflammatory reaction in host animals. The scrapie agent is thought to be spread most commonly from the ewe to her offspring and to other lambs in contemporary lambing groups through contact with the placenta and placental fluids. Signs or effects of the disease usually appear 2 to 5 years after the animal is infected but may take longer to appear. Sheep usually live 1 to 6 months after the onset of clinical signs and in some cases longer, but death is inevitable.

On the farm, veterinarians diagnose scrapie based on the appearance of its signs combined with knowledge of the animal's history. Signs of scrapie vary widely among individual animals and develop very slowly. As the result of nerve cell damage, affected animals usually show behavioral changes, tremor (especially of the head and neck), pruritus, and locomotor incoordination, which progresses to recumbency and death. Early signs include subtle changes in behavior or temperament. These changes may be followed by scratching and rubbing against fixed objects, apparently to relieve itching. Other signs are loss of coordination, weight loss despite retention of appetite, biting of feet and limbs, lip smacking, and gait abnormalities, including high-stepping of the forelegs, hopping like a rabbit, and swaying of the back end.

An infected animal may appear normal if left undisturbed at rest. However, when stimulated by a sudden noise, excessive movement, or the stress of handling, the animal may tremble or fall down in a convulsivelike state.

Several other problems can cause clinical signs similar to scrapie in sheep, including the diseases ovine progressive pneumonia, listeriosis, and rabies; the presence of external parasites (lice and mites); pregnancy toxemia; and toxins.

Testing—The only official tests currently used for scrapie in the United States are histopathologic examination of brain tissue at necropsy or detection of the abnormal prion protein by immunohistochemistry (IHC) on brain or third-eyelid lymphoid tissue or Western blotting. Pathological changes of scrapie are confined to the central nervous system. The lesions are characteristically found in the grey matter of the brain stem. They include neuronal vacuolation, other forms of neuronal degeneration, astrocytosis, and a vacuolar or spongy alteration called status spongiosis. The third-eyelid test is the only APHIS-approved test for scrapie detection in live animals. The test uses a biopsy of lymphoid tissue from the third eyelid and IHC.

Identifying Affected Animals—Animals that are incubating the disease and may be shedding the agent are rarely identified until the onset of clinical signs. The only absolute way to prevent an introduction of scrapie into a flock is to prohibit all movements of female sheep and goats into a flock. Until a highly sensitive, cost-effective live-animal test is available, the risk can be substantially reduced by

maintaining a closed ewe flock; by acquiring female animals only from certified free flocks, zones, States, or countries; and by acquiring ewes that are genetically resistant. If scrapie develops in a flock, the risk of further spread, reintroduction of the disease, or both can be minimized through

- Removal of genetically susceptible sheep and exposed goats;
- Live-animal testing and removal of test-positive animals;
- Genetic selection;
- Careful cleaning and disinfection of lambing facilities;
- Improved management of animals at lambing time with particular attention to segregating them into small groups or keeping them alone when possible, maintaining the risk classification of animals in each group at the same level, and removing and incinerating placenta and soiled bedding immediately following lambing; and
- When warranted, employing embryo transfer, cesarean section, or both.

When a flock exhibits high levels of exposure, total depopulation may be the most cost-effective cleanup strategy.

The National Scrapie Program—The National Scrapie Program has two major components: the Scrapie Flock Certification Program (SFCP) and an Accelerated Scrapie Eradication Program (ASEP).

Scrapie Flock Certification Program—The intent of the SFCP is to monitor flocks over a period of 5 years or more to identify those free of scrapie. Scrapie has a long incubation period; thus, a flock is considered free of the disease if no sheep have been diagnosed with scrapie and there is no clinical evidence of it over a 5-year period. The longer a flock is enrolled and in compliance with the requirements of the program, the more likely the sheep in the flock are free of scrapie.

The economic value of animals in enrolled flocks increases the longer they are in the program, especially once the flock is certified. Animals from certified flocks are eligible for export to many countries and are a valuable source for replacement of breeding animals in other flocks.

The SFCP program receives producer input at the national and State levels through the National Oversight Committee and the State Certification Boards. These groups include producers, accredited veterinarians, allied industry representatives, State animal health officials, and APHIS officials.

Any flock owner may apply to enter the SFCP by contacting the nearest APHIS–VS Area Office. The State Certification Board reviews applications and approves or disapproves admission to the program. The application package consists of

- A list of animals in the flock, including breed, gender, and official program identification (tattoo, microchip, or APHIS-approved, tamper-resistant eartag);

- A statement by the flock's accredited veterinarian indicating that there is no evidence of scrapie in the flock; and
- An inspection report completed by a State or Federal regulatory official verifying that the animals are officially identified, that the records are complete, that there is no evidence of scrapie in the flock, and that the owner is in compliance with all other SFCP standards.

When participating in the program, flock owners must

- Agree to report scrapie-suspect animals immediately to the proper animal health official so that the case can be investigated and appropriate action taken;
- Officially identify all animals within a flock that are 1 year of age or older;
- Officially identify all animals less than 1 year old (except for those in slaughter channels) whenever a change of ownership occurs;
- Maintain required records as specified by the SFCP. Owners must account for all acquisitions, departures, births, and deaths. Records must be retained for a minimum of 5 years after an animal dies or is removed from the flock;
- Allow breed associations and registries, livestock markets, and packers to disclose records to APHIS, State animal health officials, and State Scrapie Certification Board members;
- Provide necessary facilities and personnel to assist in inspections, including checking animals for official identification and signs of scrapie and checking records for completeness and accuracy;
- Submit to an official laboratory tissues from scrapie-suspect animals and from animals suspected of having other neurological or chronic, debilitating illnesses; and
- Report to the State Certification Board acquisitions of sheep from flocks with lower status or from flocks not participating in the SFCP.

The SFCP has several categories defining the status of participation:

Complete Monitored Category—These flocks are approved to participate in a monitoring program that leads to certification. Such flocks have either enrolled or certified status.

Complete Monitored Enrolled Flock—These flocks are assigned an enrollment date (the date the State Certification Board approves admission to the program) and a status date. The status date is the best risk indicator for scrapie in an enrolled flock. Initially, the status date is the same as the enrollment date and will be maintained if a flock continues to meet program requirements. However, if a flock acquires animals or commingles with animals that do not meet the SFCP standards, the status date changes to reflect the date of this occurrence. The older the date, the longer the flock has been meeting program standards.

Rams may be acquired from any flock (other than source or infected flocks), including those not enrolled in the SFCP. Presently, there is no scientific evidence that supports rams as a risk for spreading scrapie. Ewes have been found to spread the disease. Therefore, to maintain scrapie-free status, flock owners may obtain ewes only from other enrolled flocks with an equal or older status date. Owners acquiring ewes from flocks not participating in the SFCP or from flocks of lower scrapie status will have their flock's status date adjusted to reflect the addition of the lowest category animal.

Complete Monitored Certified Flock—When an enrolled flock has met SFCP standards for 5 consecutive years, it advances to certified status. Sheep from these flocks are unlikely to be infected with scrapie. Flocks in this status may be augmented with rams from other certified flocks or enrolled flocks. Though rams present minimal risk of spreading scrapie, APHIS recommends that producers consider the risk of scrapie infection when purchasing rams from lesser status flocks. Ewes may be purchased only from other certified flocks. Both enrolled and certified flocks are inspected annually by State or Federal regulatory personnel. Flocks of both statuses may also loan out rams for breeding without jeopardizing their status date. Rams must reside in the program flock other than for breeding purposes and cannot be housed with ewes 30 days before and 60 days after lambing.

Selective Monitored Category—This category is open to any flock and was designed for slaughter lamb producers to allow for scrapie surveillance in large production flocks. Only male animals more than 1 year of age must be officially identified. Producers agree to submit for scrapie diagnosis animals that are culled from the flock or that die. (The number of animals to submit per year depends on the flock size.) Additionally, an accredited veterinarian must inspect all cull ewes for clinical signs of scrapie prior to slaughter. Selective status is maintained indefinitely as long as the flock meets the category requirements. The selective monitored category flocks do not progress to certified status.

Accelerated Scrapie Eradication Program (ASEP)—The ASEP is based on the following key concepts:

- Identifying infected sheep before development of clinical signs, through live-animal testing and active slaughter surveillance;
- Effective tracing of infected animals to their flock or herd of origin and tracing and testing of exposed animals made possible as a result of the new identification requirements; and
- Providing effective cleanup strategies that will allow producers to stay in business, preserve breeding stock, and remain economically viable.

APHIS provides the following assistance to owners of exposed and infected flocks or herds that participate in cleanup plans:

- Indemnity for high-risk, suspect, and scrapie-positive sheep and goats that owners agree to destroy;
- Scrapie live-animal testing;
- Genetic testing; and
- Testing of exposed animals that have been sold out of infected and source flocks or herds.

Role of Accredited Veterinarians in Scrapie Eradication—Accredited veterinarians will play an integral role in the eradication of scrapie. Within the eradication program, they are required to report scrapie suspects to State and Federal authorities. In addition to this critical role, accredited veterinarians are the producers' primary source of education about all aspects of the program, including identification, recordkeeping, and shipping requirements. When requested by the producer, accredited veterinarians can apply official eartags, collect and submit samples for official genotype tests and eventually third-eyelid tests, and issue Certificates of Veterinary Inspection for interstate movement. [A special accreditation certification may be required for veterinarians to collect third-eyelid test samples.] Additionally, accredited veterinarians will also play a very important role in educating producers about the disease and in assisting producers with the prevention and elimination of scrapie.

Information on the issuance of Certificates of Veterinary Inspection for sheep and goats and on identification of sheep and goats can be found in the "Sheep and Goat" section under the "Animal Movement" heading.

Additional information on the APHIS National Scrapie Program may be found at <http://www.aphis.usda.gov/vs/nahps/scrapie>.

Bovine Spongiform Encephalopathy (BSE)

BSE, widely referred to as "mad cow disease," is a chronic degenerative TSE disease affecting the central nervous system of cattle.

BSE was first diagnosed in 1986 in Great Britain. Since then, more than 185,000 cases have been confirmed worldwide. More than 95 percent of these have occurred in the United Kingdom, but the disease has also been confirmed in native-born cattle in the following countries: Austria, Belgium, Canada, the Czech Republic, Denmark, Finland, France, Germany, Greece, Ireland, Israel, Italy, Japan, Luxembourg, Liechtenstein, the Netherlands, Poland, Portugal, Slovakia, Slovenia, Spain, Switzerland, and the United States.

Cattle affected by BSE experience progressive degeneration of the nervous system. Affected animals may display changes in temperament (nervousness or aggression), abnormal posture, incoordination and difficulty in rising, decreased milk production,

or loss of condition without noticeable loss of appetite. Affected cattle die. The causative agent of the disease is not completely characterized, and there is neither any treatment nor a vaccine to prevent BSE. The incubation period is from 2 to 8 years. Following the onset of clinical signs, the animal's condition deteriorates until it either dies or is destroyed. This process usually takes from 2 weeks to 6 months.

The preferred method for disposal of BSE-infected carcasses is incineration or alkaline digestion. Under no circumstances should BSE suspects be used for human or animal consumption.

The Cause of BSE and Tissues Affected—The agent responsible for BSE is smaller than the smallest known virus and is extremely resistant to heat and to normal sterilization processes. It also does not evoke any detectable immune response or inflammatory reaction in host animals.

Three main theories on the nature of the agent have been advanced: (1) the agent is a virus with unusual characteristics, (2) the agent is a prion (an exclusively host-coded protein that is modified to a partially protease-resistant form after infection), and (3) the agent is a virino (a small, noncoding regulatory nucleic acid coated with a host-derived protective protein).

In cattle naturally infected with BSE, the BSE agent has been found only in brain tissue, in the spinal cord, and in the retina. In experimentally infected cattle, the distal ileum, bone marrow, dorsal root ganglion, and trigeminal ganglion from experimentally infected cattle were also found to be infective. To date, no evidence of infectivity has been detected in milk or muscle tissue.

Testing—Currently, there is no test to detect the disease in a live animal. BSE is confirmed by either histopathologic examination of brain tissue or by the detection of an abnormal protein called a prion via one of several methods that also require brain tissue. BSE is so named because brain tissue taken from infected cattle looks spongy when examined under a microscope.

Epidemiologic data suggest that, in the United Kingdom, BSE is an extended common-source epidemic involving animal feed containing contaminated meat-and-bone meal as a protein source. There are different scientific hypotheses concerning the origins of the disease. It may have been caused by feeding cattle rendered protein produced from the carcasses of scrapie-infected sheep or cattle with a previously unidentified TSE. There is no evidence that BSE spreads horizontally, that is, by contact between unrelated adult cattle or contact between cattle and other species.

Eradication and Control Efforts—Agricultural officials in the United Kingdom and other countries affected with BSE have taken actions to eradicate or control the disease. These entail prohibiting the inclusion of mammalian meat-and-bone meal in animal feed; prohibiting the use of specified risk materials (those tissues, e.g.,

brain and spinal cord, known to have the highest infectivity) in food, feed, or other products; and destroying animals showing signs of BSE and other animals at high risk of developing the disease. As a result of these actions, most notably the imposition of feed bans, the rate of newly reported cases of BSE in the United Kingdom has greatly decreased.

In March 1996, the United Kingdom's Spongiform Encephalopathy Advisory Committee (SEAC) announced the identification of 10 cases of variant Creutzfeldt–Jakob disease (vCJD) in people. These cases had a characteristic clinical and pathological phenotype that differed from other routinely diagnosed cases of classic (sporadic) CJD. SEAC concluded that the most likely explanation at that time was that the cases were linked to exposure to BSE before the introduction of controls on risky material from cattle. Current evidence suggests that vCJD is a new condition, both clinically and pathologically. The epidemiologic evidence is consistent with BSE, and the causal agent and recent laboratory evidence provide strong support for the hypothesis of a causal link between BSE and vCJD.

Identifying Affected Animals—Since 1989, APHIS has prohibited the import of ruminants and most ruminant products from countries that have identified BSE in native cattle or that are at risk for BSE. An ongoing, comprehensive interagency surveillance program for BSE has been in place since 1990. APHIS also supports the Food and Drug Administration's (FDA) regulation prohibiting the use of most mammalian proteins in ruminant feed. Currently, USDA allows the importation of certain commodities under permit or by regulation from minimal BSE-risk countries. BSE surveillance efforts are currently increasing in the United States, and accredited veterinarians with proper training can anticipate greater involvement in this area.

BSE is a reportable disease. Any suspicious cases should be reported to the APHIS–VS Area Office or the State animal health official as a suspected foreign animal disease (FAD).

Chronic Wasting Disease (CWD)

CWD is a TSE of North American deer and elk. First recognized as a clinical “wasting” syndrome in 1967 in mule deer in a wildlife research facility in northern Colorado, it was identified as a TSE in 1978. CWD is typified by chronic weight loss leading to death. There is no known relationship between CWD and any other TSEs of animals or people.

In the mid-1980s, CWD was first detected in free-ranging deer and elk in contiguous portions of northeastern Colorado and southeastern Wyoming. In May 2001, CWD also was found in free-ranging deer in the southwestern corner of Nebraska (adjacent to Colorado and Wyoming). The limited area of northern Colorado, southern Wyoming, and western Nebraska in which free-ranging deer and elk positive for

CWD have been found is referred to as the endemic area. CWD has also been identified in free-ranging deer and elk in Wisconsin, Illinois, New Mexico, South Dakota, and Utah.

At press time [April 2005], CWD had been found in 13 States. In eight of those, it has been found in wildlife (Colorado, Illinois, New Mexico, North Dakota, South Dakota, Utah, Wisconsin, and Wyoming). CWD has been diagnosed in four States in farmed cervid herds and wild populations (Colorado, Nebraska, South Dakota, and Wisconsin). Nine States have CWD in farmed cervid herds; of those, six States have cleaned up their diseased herds while three (Colorado, New York, and Wisconsin) still have positive farmed herds.

Species that have been affected with CWD include Rocky Mountain elk, mule deer, white-tailed deer, and black-tailed deer. Other ruminant species, including wild ruminants and domestic cattle, sheep, and goats, have been housed in wildlife facilities in direct or indirect contact with CWD-affected deer and elk. No cases of CWD have been detected in these other ruminant species.

Like the causative agents of scrapie and BSE, the agent responsible for CWD has not been completely characterized. The CWD agent is thought to be an abnormal prion protein. It is smaller than most viral particles and does not evoke any detectable immune response or inflammatory reaction in the host animal. On the basis of experience with other TSE agents, the CWD agent is assumed to be resistant to enzymes and chemicals that normally break down proteins as well as to heat and normal disinfection procedures.

Clinical Signs—Most cases of CWD occur in adult animals. The disease is progressive and always fatal. The most obvious and consistent clinical sign of CWD is long-term weight loss. Behavioral changes also occur in the majority of cases, including decreased interactions with other animals in the pen, listlessness, lowering of the head, blank facial expression, and repetitive walking in set patterns within the pen. In elk, behavioral changes may also include hyperexcitability and nervousness. Affected animals continue to eat grain but may show decreased interest in hay. Victims salivate excessively and grind their teeth. Most deer show increased drinking and urination.

Testing—Research is being conducted to develop live-animal diagnostic tests for CWD. Currently, definitive diagnosis is based on IHC testing of the obex area of the brain stem or the medial retropharyngeal lymph nodes. Gross lesions seen at necropsy reflect the clinical signs of CWD, primarily emaciation and sometimes aspiration pneumonia, which may be the cause of death. On microscopic examination, lesions of CWD in the central nervous system resemble those of other spongiform encephalopathies. At this time, abnormal prion proteins are detected using IHC,

Western blotting, and enzyme-linked immunosorbent assay (ELISA). New technologies may provide additional means of detecting abnormal prion proteins in the future.

Official CWD tests are performed only at approved university, State, or Federal veterinary diagnostic laboratories. If the animal to be tested is a farmed deer or elk, accredited veterinarians should check with Federal or State regulatory veterinarians for information on sample collection and appropriate sample submission. If the animal to be sampled is a wild deer or elk that is suspected of having CWD, accredited veterinarians should inform State and Federal authorities and work with their State wildlife management agency to find out how officials would like the sample collected and submitted. Check with the State animal health official or APHIS–VS Area Office to determine whether CWD testing is being conducted in hunter-killed deer. However, the wildlife management agencies have other alternatives they may choose to use as well.

If the animal to be sampled is a clinically normal wild animal that an individual hunter would like tested, accredited veterinarians should also work with their State wildlife management agency or department of agriculture to find out how best to proceed. Several laboratories exist with sufficient capacity to provide fee-for-service testing for samples collected by individual hunters. Accredited veterinarians should always check with the diagnostic laboratory to make sure samples are properly collected, packaged, and shipped.

Disposal—Carcass and tissue disposal options may be regulated by the Environmental Protection Agency (EPA), FDA, or State or local authorities. Accredited veterinarians should check with these entities first before disposing of a suspect or positive carcass.

Management—APHIS has provided assistance to State officials in diagnosing CWD and in monitoring international and interstate movements of animals to help prevent further spread of CWD. An extensive nationwide surveillance effort was started in 1997–98 to better define the geographic distribution of CWD in free-ranging cervids. Surveillance for CWD in farmed elk began in 1997 and has been a cooperative effort involving State agriculture and wildlife agencies and APHIS. Farmed cervid surveillance has been increasing each year since 1997 and will be an integral part of the USDA program to eliminate CWD from farmed elk.

Moreover, USDA has continued to develop a national herd-certification program to eliminate CWD from farmed cervids. The program includes fencing, identification, inventory, and surveillance requirements for herd advancement. After 5 years of surveillance with no evidence of disease, a herd is considered to be certified. A proposed rule to establish the herd-certification program and restrict interstate

movement was published in the Federal Register on December 23, 2003. Comments on the proposed rule have been evaluated, and the final rule is in the clearance process. In addition, recently detected outbreaks in wildlife and requests for assistance from the States prompted Congress to ask USDA and the U.S. Department of the Interior to work with the States to create a national plan to assist States, Federal agencies, and Indian tribes in addressing CWD in both farmed and wild animals. Involved agencies continue to work toward the implementation of this plan as existing budgets allow.

Johne's Disease

Johne's disease is a contagious, chronic, and usually fatal infection that affects primarily the small intestine of ruminants. Johne's disease is caused by *Mycobacterium avium* subspecies *paratuberculosis* (*M. avium* subsp. *paratuberculosis*), a hardy bacterium related to the agents of leprosy and TB. Johne's disease is found worldwide.

About 41 percent of U.S. dairy herds have at least one cow that tests positive for Johne's; infection is even more common in large dairy herds. Because few herds have instituted biosecurity programs, infection continues to spread. Although infection seems less widely distributed in beef herds, Johne's is nonetheless of critical significance to all cattle producers.

Johne's disease can have severe economic impacts on infected herds. It is imperative that U.S. herds employ safeguards against becoming infected. Identifying and protecting noninfected herds will provide a source of breeding stock and replacement animals for other herds and help to reduce the national prevalence of the disease.

Clinical Signs and Stages

In cattle, signs of Johne's disease include weight loss and diarrhea with normal appetite. Several weeks after the onset of diarrhea, a soft swelling may occur under the jaw. This intermandibular edema, or "bottle jaw," is due to protein loss from the bloodstream into the digestive tract. Animals at this stage of the disease will not live very long—perhaps a few weeks at most.

Signs are rarely evident until 2 or more years after the initial infection, which usually occurs shortly after birth. Animals exposed at an older age, or exposed to a very small dose of bacteria at a young age, are not likely to develop clinical disease until they are much older than 2 years.

Johne's disease is generally described as having four stages:

Stage I: Silent, subclinical, nondetectable infection. Typically, this stage occurs in calves, heifers, and young stock under 2 years of age or animals exposed at an older age. Current tests (including fecal culture and serological tests) cannot detect infection in animals that young. Research to develop new tests to detect the disease in such animals is ongoing. This stage progresses slowly over many months or years to Stage II. It is possible that some animals recover from this early phase of infection.

Stage II: Subclinical shedders. This stage usually occurs in heifers or older animals. Animals appear healthy but are shedding *M. avium* subsp. *paratuberculosis* in their manure at levels high enough to be detected. Current blood tests are not reliable to detect Johne's in animals at this stage. These animals pose a major but often hidden threat of infection to other animals through contamination of the environment. Stage II animals may or may not progress over time to Stage III.

Stage III: Clinical Johne's disease. Animals in this stage have advanced infection, and clinical signs are often brought on by stress. Clinical signs at this stage include acute or intermittent diarrhea, weight loss despite a normal appetite, and decreased milk production. Some animals appear to recover but often relapse in the next stressful period. Most of these animals are shedding billions of Johne's-causing organisms, and fecal culture tests give positive results. Many animals are positive on serologic tests as well. Clinical signs may last days to weeks before the animals progress to Stage IV.

Stage IV: Emaciated animals with fluid diarrhea. This is the terminal stage of the disease in which animals become extremely thin and develop bottle jaw. Animals culled to slaughter in this stage may not pass inspection for human consumption due to disseminated infection.

In the typical herd, for every animal in Stage IV, many other cattle are infected. For every obvious case of Johne's disease (Stage IV) among dairy cattle on the farm, 15 to 25 other animals are likely infected. The clinical case represents only the "tip of the iceberg" of Johne's infection.

In other ruminant species, the progression of the disease may occur more rapidly with weight loss as the only visible sign of infection.

Epidemiology

Johne's disease usually enters a herd when healthy but infected animals (Stage I or II) are introduced. Cattle are most susceptible to the infection in the first year of life. Calves most often become infected by swallowing small amounts of infected manure from the calving environment or udder of the cow. In addition, calves can become infected while in the uterus or by swallowing bacteria passed in milk and colostrum. Studies have shown that up to 25 percent of calves are infected in utero if the cow is in Stage III of the disease. Calves may become infected by exposure to contaminated manure any time in the first year of life (e.g., from manure splatter to calves raised near adult cows).

Cattle of any age can become infected, though some age resistance does occur. This age resistance can be overcome by high doses of bacteria over time from sources such as manure-contaminated feed bunks or water sources. All ruminants are susceptible to Johne's disease. In addition, all infected animals shed the organism through feces, thereby creating a possible route of exposure.

Diagnosis

In the live animal, fecal culture is the most accurate diagnostic test. However, on a herd basis only about 40 percent of infected cattle will be disclosed by even the most sensitive fecal culture technique. The sensitivity of fecal culture is low because some infected cattle (Stages I and II) do not shed the agent in their manure or because some animals shed the agent only intermittently and can be missed at testing time.

In addition, *M. avium* subsp. *paratuberculosis* is a slow-growing organism. Fecal culture on solid media requires 12 to 16 weeks for results. New liquid culture systems have reduced this time to as little as 5 weeks. DNA probes can detect the presence of *M. avium* subsp. *paratuberculosis* without its having to be grown. The test has the advantage that it takes less than 3 days but has the disadvantages of higher cost and the potential of missing animals shedding only low quantities of bacteria.

Various serologic tests, including ELISA, agar-gel immunodiffusion (AGID), and complement fixation, detect antibody in the serum and can be used on a herdwide basis to screen for infection. Although less accurate than fecal culture, these tests are more rapid and less expensive. Serologic tests also work well to confirm clinical cases.

It is important to note that, as an accredited veterinarian, you should use only the USDA-licensed ELISA tests and USDA-approved laboratories.

In the dead animal, Johne's disease may be diagnosed by culture and histopathology of the lower small intestine and associated lymph nodes.

Johne's Disease Control Program

VS' goal is to curtail the spread of *M. avium* subsp. *paratuberculosis* to noninfected herds and to reduce the disease prevalence in herds currently infected. To accomplish this goal, VS has developed a cooperative Federal–State–Industry program that provides producer assistance by performing risk assessments of *M. avium* subsp. *paratuberculosis* transmission and developing herd-management plans to mitigate those risks. VS is also working to provide funding for research to develop and validate control measures. Moreover, VS coordinates State activities and monitors current levels of infection in the United States.

State Governments and Tribal Councils participate by providing personnel to conduct risk assessments and aid in the development of herd-management plans. These agencies also help producers by supporting testing at reduced fees and underwriting other direct program costs. Industry cooperates by encouraging producers to participate in the program through information provided in industry journals and consultation with APHIS and professional societies.

To work with the Johne's Disease Control Program as an accredited veterinarian, one must first become a Johne's Certified Veterinarian. Johne's Certified Veterinarians have received additional education on the disease and have demonstrated to the State-Designated Johne's Coordinator that they can

1. Develop approved herd-management plans;
2. Provide appropriate Johne's disease risk assessments;
3. Understand Johne's disease epidemiology, testing, and test interpretation;
4. Understand State and Federal program requirements; and
5. Collect and submit fecal, tissue, and blood samples for Johne's disease testing.

Johne's Certified Veterinarians must provide Johne's risk assessments and develop herd-management plans and collect and submit samples according to the program requirements.

For information on Johne's Certified Veterinarian training in your State, please contact your State animal health official or the APHIS–VS Area Office nearest you. For further information on the Voluntary Bovine Johne's Disease Control Program, please go to <http://www.aphis.usda.gov/vs/nahps/johnes> on the Web.

Prevention

For herds that are not infected, managers should take precautions against introduction of Johne's disease. Such precautions include keeping a closed herd or requiring that replacement animals come from test-negative herds. Some States offer Johne's certification to test-negative herds. The new Uniform Program Standards for the Voluntary Bovine Johne's Disease Control Program (APHIS 91–45–014) outline a new, voluntary national Johne's classification program that helps to identify risk of infection in participating herds. The Johne's Program Standards can be found on the Web at <http://www.aphis.usda.gov/vs/nahps/johnes-umr.pdf>.

The key to preventing Johne's infection is to know that

- Herds get infected only when infected cattle are added to the herd;
- Prepurchase testing for Johne's disease is today's standard of veterinary practice; and
- Testing the herd of origin is much more reliable than testing only the purchased cattle.

Table 2 outlines options (in order of decreasing risk) of buying *M. avium* subsp. *paratuberculosis*-infected animals.

Table 2—Johne's disease testing options and the risk of buying cattle

Options	Risk
No testing.	Very risky—10 percent chance of purchased animal being an <i>M. paratuberculosis</i> -infected cow.
ELISA-test the individual animal before purchase; do not purchase anything from herds with cows suspect or positive by ELISA.	Slightly less risky than not testing; more confidence in negative tests on older animals, not heifers.
Quarantine and test after purchase: ELISA positive—culture twice at 6-month intervals.	Lowers risk and is sound policy for several infectious diseases of cattle.
Partial test on herd of origin: ELISA on 30 lactation or older cows.	Low risk of Johne's disease in any animal from such herds but not 0 percent.
Whole-herd ELISA-test herd of origin.	Very low risk of Johne's disease if herd tests 100-percent ELISA negative or culture negative.
Purchase only from certified-free herds.	No risk of Johne's disease.

Poultry

National Poultry Improvement Plan (NPIP)

The NPIP is a voluntary State–Federal cooperative testing and certification program for poultry breeding flocks, baby chicks, poults, hatching eggs, hatcheries, and dealers. It became operative in 1935 with a three-pronged focus on certifying breeding stock, bird performance, and the elimination of bacillary white diarrhea (caused by *Salmonella pullorum*). The objective of the NPIP is to provide a cooperative State–Federal program through which new technology can effectively be applied to the improvement of poultry and poultry products by establishing standards for the evaluation (testing) of poultry breeding stock, baby chicks, poults, and hatching eggs with respect to freedom from certain diseases.

The diseases covered by the NPIP are avian influenza (fowl plague) and those produced by *S. pullorum* (pullorum disease), *S. gallinarum* (fowl typhoid), *S. enterica* var. *enteritidis*, *Mycoplasma gallisepticum* (MG, chronic respiratory disease, and infectious sinusitis in turkeys), *M. synoviae* (MS, infectious synovitis), and *M. meleagridis* (MM, day-old airsacculitis). In addition, the NPIP has programs such as “U.S. Salmonella Monitored” and “U.S. Sanitation Monitored” that are intended to reduce the incidence of salmonella organisms in hatching eggs, chicks, and poults through effective and practical sanitation procedures at the breeder farm and in the hatchery.

Poultry is defined in the NPIP as domesticated fowl, including chickens, turkeys, ostriches, emus, rheas, cassowaries, waterfowl, and game birds (except doves and pigeons) that are bred primarily to produce eggs and meat. Three types of participants are involved in the NPIP: independent flocks, hatcheries, and dealers. The poultry products certified by the NPIP are hatching eggs, baby chicks, poults, and started pullets.

The vast majority of U.S. States prohibit the entry of any poultry shipments except those designated pullorum-typhoid clean. Essentially, such bans mean that poultry moving interstate should participate in the “U.S. Pullorum-Typhoid Clean” program of the NPIP or be tested negative for pullorum-typhoid before leaving their home State. Fifteen States require that all shipments of turkeys they receive be MG clean. Essentially, that requirement means that turkeys moving interstate should participate in the “U.S. MG Clean” program of the NPIP or be tested free of MG before shipment.

Most U.S. trading partners importing poultry and products from the United States also require NPIP participation. Accredited veterinarians may be requested to inspect breeder flocks participating in the NPIP for compliance with the standards and to issue health certifications.

Every spring, APHIS publishes a directory of participants handling egg-type and meat-type chickens and turkeys and a directory of participants handling waterfowl, exhibition poultry, game birds, and ratites. These directories list hatcheries, independent flocks, and dealers participating in the NPIP, the products that they handle, and the disease classifications that they participate in. Other information about the program can be obtained from the NPIP, USDA–APHIS–VS, 1498 Klondike Rd, Suite 200, Conyers, GA 30094. Information can also be obtained on the NPIP Web site: **<<http://www.aphis.usda.gov/vs/npip>>**.

Avian Influenza

Many strains of avian influenza (AI) virus exist worldwide and are capable of producing many degrees of the disease that vary tremendously in virulence and clinical signs. These viruses affect chickens, turkeys, pheasants, quail, ducks, geese, and guinea fowl as well as a wide variety of free-flying species. Migratory waterfowl have been shown to be a natural reservoir for AI.

AI viruses can be classified in either low-pathogenicity or high-pathogenicity forms based on the severity of the illnesses they produce. Most of the highly pathogenic AI viruses fall under types H5 or H7; however, most AI infections, including those typed as H5 or H7, are clinically of low pathogenicity. These typically produce few or no clinical signs in affected birds. Sometimes the only evidence of this virus is a minor increase in bird mortality. Aside from the possible mutation of low-pathogenicity strains under field conditions into high-pathogenicity strains, the presence of low-pathogenicity virus can also result in restrictions on exports and serious repercussions on the production economy. APHIS works to keep AI from becoming established in U.S. poultry populations.

Identifying Infected Birds

Birds infected with the AI virus may show one or more of the following signs:

- Sudden death without clinical signs;
- Lack of energy and appetite;
- Decreased egg production or soft-shelled or misshapen eggs;
- Swelling of head, comb, eyelid, wattles, and hocks;
- Purple discoloration of wattles, comb, and legs;
- Nasal discharge, coughing, and sneezing;
- Incoordination; or
- Diarrhea.

Epidemiology

AI can strike poultry quickly and spread rapidly from premises to premises. Migratory waterfowl can introduce the disease to U.S. poultry. International visitors or smuggled birds are also risk factors. Once introduced, the disease spreads from bird to bird by direct contact or through contact with contaminated manure, equipment, vehicles, crates, and the clothing or shoes of individuals who have come in contact with the virus. The virus remains viable in the environment for long periods, particularly at lower temperatures, and it can survive indefinitely in frozen material.

Biosecurity Measures on the Farm

Veterinarians should work with poultry producers to strengthen biosecurity practices. Established and enforced biosecurity protocols will help prevent introduction of AI and other infectious agents. Recommended biosecurity measures include

- Establishing an “all-in, all-out” flock-management policy;
- Protecting against exposure to wild birds or water or ground contaminated by wild birds;
- Closing bird areas to nonessential personnel or vehicles;
- Providing employees with clean clothing and disinfection facilities and directions for their use;
- Thoroughly cleaning and disinfecting equipment and vehicles (including tires and undercarriage) when entering or leaving the farm;
- Banning the borrowing or lending of equipment or vehicles;
- Banning visits to other poultry farms, exhibitions, fairs, and sales or swap meets (if visits must occur, direct workers to change footwear and clothing on their return); and
- Banning bringing birds in slaughter channels back to the farm.

Reporting Suspicious Diseases

Practitioners are encouraged to educate their poultry clientele and pet bird owners to report all signs of disease. If signs of disease resemble AI or cannot be diagnosed, they should immediately be reported to the AVIC or State animal health official.

Exotic Newcastle Disease (END)

END is a contagious and fatal disease affecting all species of birds. Previously known as velogenic viscerotropic Newcastle disease, END is one of the most infectious diseases of poultry in the world. The mortality in unvaccinated birds can reach 100 percent, and birds may die without any clinical signs of disease. Though recommended and widely used, vaccination does not fully protect against END and may obscure the disease, resulting in further spread.

Identifying Affected Birds

END affects the respiratory, digestive, and nervous systems. The incubation period ranges from 2 to 15 days. An infected bird may exhibit some or all of the following signs:

- Sneezing, gasping, nasal discharge, coughing;
- Greenish, watery diarrhea;
- Depression, muscular tremors, droopy wings, opisthotonus, circling, complete paralysis;
- Partial to complete drop in egg production and thin-shelled eggs;
- Swelling of tissues around the eyes and in the neck;
- Sudden death; and
- Increased flock mortality.

Epidemiology

END is spread primarily through direct contact with droppings and nasal, ocular, or oral secretions of infected birds. The virus is present in high concentrations in body fluids and discharges and spreads rapidly through birds in confinement. The virus can be carried from one premises to another on contaminated shoes and clothing of service crews and visitors and their contaminated vehicles. END virus survives for several weeks in a warm and humid environment on feathers and in manure and other materials and can survive indefinitely in frozen material. It is rapidly destroyed by dehydration and ultraviolet rays. Smuggled psittacines, especially Amazon parrots from Latin America, pose great risks for introducing the virus into the United States. These parrots are asymptomatic carriers and can carry the virus for up to 400 days.

Biosecurity Measures on the Farm

Veterinarians should work with poultry producers to strengthen biosecurity practices. Established and enforced biosecurity protocols will help prevent introduction of END and other infectious agents. Recommended biosecurity measures include

- Establishing an “all-in, all-out” flock-management policy;
- Protecting against exposure to wild birds or water or ground contaminated by wild birds;
- Closing bird areas to nonessential personnel or vehicles;
- Providing employees with clean clothing and disinfection facilities and directions for their use;
- Thoroughly cleaning and disinfecting equipment and vehicles (including tires and undercarriage) when entering or leaving the farm;
- Banning the borrowing or lending of equipment or vehicles;
- Banning visiting other poultry farms, exhibitions, fairs, and sales or swap meets (if visits must occur, direct workers to change footwear and clothing on their return); and
- Banning bringing birds in slaughter channels back to the farm.

Reporting Suspicious Diseases and Illegal Bird Movements

Veterinarians may receive information regarding illegal introductions of birds from countries at risk for END. All such incidents should be reported to the State animal health official or APHIS–VS Area Office. Once END has been introduced, the only way to eradicate it is through depopulation, cleaning and disinfection, and strict quarantine. Practitioners are encouraged to educate their poultry clientele and pet-bird owners to report all signs of disease. If signs of disease resemble END or cannot be diagnosed, they should immediately be reported to the AVIC or State animal health official.

Horses

Equine Infectious Anemia (EIA)

EIA is an infectious and potentially fatal viral disease of members of the horse family. The equine infectious anemia virus (EIAv) is categorized as a retrovirus: it contains genetic RNA material, which it uses to produce DNA. The DNA is then incorporated into the genetic makeup of infected cells. There is no vaccine or treatment for the disease. It is often difficult to differentiate from other fever-producing diseases, including anthrax, influenza, and equine encephalitis.

Clinical Forms

Acute—When horses are exposed to EIAv, they may develop severe, acute signs of disease and die within 2 to 3 weeks. This form of the disease is the most damaging and the most difficult to diagnose because the signs appear rapidly, and often only an elevated body temperature is noted. One-fifth of a teaspoon of blood from a horse with acute EIA contains enough virus to infect a million horses.

Clinical signs of acute infectiousness are rather nonspecific; in mild cases the initial fever may be short lived (often less than 24 hours). Horse owners and veterinarians may not observe this initial response when a horse is infected with EIAv. Horses often recover and continue to move freely in the population. The first indication that a horse was exposed to, and infected with, EIAv may be a positive result on a routine annual test.

Chronic—If the horse survives the first acute bout, it may develop a recurring clinical disease with most or all of the following signs:

- **Fever:** An infected horse's temperature may rise suddenly to 40.5 °C (105 °F) or, rarely, as high as 42.2 °C (108 °F) but may then drop back to normal for an indeterminate period until the onset of another episode.
- **Petechial hemorrhages:** Minute blood-colored spots appear on the mucous membranes.
- **Depression:** A horse appears more or less dejected (head hangs low) and generally listless.
- **Weight loss:** A horse may refuse feed or may eat an inordinate amount but still continue an obvious decline from normal weight.
- **Dependent edema:** A horse may develop swelling, which is evidence of fluid collecting under the skin in the legs and under the chest and other underbody surfaces.

- **Anemia:** The horse's blood may manifest a marked drop in its red corpuscle count and appear thin and watery. The animal may also have an irregular heartbeat, and a jugular pulse may become evident.

Inapparent—The majority of horses are inapparent carriers: they show no overt clinical abnormalities as a result of infection. These animals survive as reservoirs of the infection for extended periods. Inapparent carriers have dramatically lower concentrations of EIAv in their blood than horses with active clinical signs of the disease. Only 1 horse fly out of 6 million is likely to pick up and transmit EIAv from such horses. All horses infected with EIAv are thought to remain virus carriers for life. The inapparent form may become chronic or acute owing to severe stress, hard work, or the presence of other diseases.

Transmission

EIA is a classic blood-borne infection. People have played an important role in EIAv transmission over the years by using blood-contaminated materials on different horses. But the EIAv is most often transmitted between horses in close proximity by large biting insects such as horse flies or deer flies. The bites from these flies stimulate defensive movement by the horse, which often results in an interruption of the bloodfeeding. When interrupted, the fly is motivated to complete the feeding as soon as possible. It then attacks the same or a second host and feeds to repletion. Any infective material from the blood of the first host present on the mouthparts of the insect can be mechanically transmitted to the second host.

Insect transmission of EIAv is dependent on the number and habit of the insects, the density of the horse population, the number of times the insect bites the same and other horses, the amount of blood transferred between horses, and the level of virus obtained in the blood meal.

Prevention

The AGID, or Coggins, test has been shown to correlate with horse inoculation test results for EIAv and therefore can be used to identify EIAv carriers. Although other serologic tests have been defined and approved for the diagnosis of EIA, the AGID test is recognized internationally as the “gold standard” serologic test. The use of AGID and additional tests has assisted in the control of EIA. Presently, USDA recognizes the AGID and three ELISA formats for conducting official tests.

All equine species moving interstate must be tested, with a negative result, within 6 months before entry and also must be accompanied by a permit, signed by an accredited veterinarian, that describes the animal.

Controlling the spread of EIAv involves minimizing or eliminating contact of healthy horses with the secretions, excretions, and blood of EIAv-infected horses. Once the reservoirs of EIAv are identified, separated, and maintained a safe distance from the other horses, the transmission of EIAv is broken. Until all horses are tested, precautions should be taken to prevent commingling with horses that do not originate from test-negative farms or that have been exposed to test-positive horses. All diagnostic laboratories are required to report positive test results to Federal and State authorities for appropriate action.

When an equine has a positive result on an official test for EIA, the animal must be placed under quarantine within 24 hours after positive test results are known in order to permit confirmation testing and to prevent further exposure of other equines. The equine must remain in quarantine until final classification and disposition are made.

All exposed equines (either individual or within a herd) within 200 yards of the location where a reactor equine is or was maintained must also be placed under quarantine. The quarantine area must provide no less than 200 yards of separation from all other equines. The quarantine area and the quarantined equines therein must be monitored periodically by regulatory personnel to ensure that provisions of the quarantine are not being violated.

APHIS–VS created the EIA Uniform Methods and Rules to implement and conduct a national control program for EIA. Additional information regarding the control program may be found at <http://www.aphis.usda.gov/vs/nahps/equine/eia> or be obtained by contacting the local APHIS–VS Area Office.

Equine Viral Arteritis (EVA)

EVA is an infectious viral disease of horses that causes a variety of clinical symptoms—most significantly abortions. The disease is transmitted through both the respiratory and reproductive systems. Many horses with the disease are asymptomatic, and others exhibit flulike symptoms for short periods. In mares, abortions are among the first, and in some cases, only signs of the disease. EVA has been confirmed in a variety of horse breeds, and the highest infection rate is found in adult standardbreds.

Breeders, racehorse owners, and owners of show horses all have strong economic reasons to prevent and control this disease. Although it does not kill mature horses, EVA can virtually eliminate an entire breeding season by causing a high percentage of mares to abort. In addition, U.S. horses that test positive for EVA antibodies and horse semen from EVA-infected horses can be barred from entering foreign countries. As the horse industry becomes increasingly internationalized, nearly all major horse-breeding countries are enforcing import policy measures to reduce the risk of EVA.

Transmission

EVA is primarily a respiratory disease. Healthy horses can inhale particles in the nasal discharges from acutely infected horses during movements at sales, shows, and racetracks. Because horses are herd animals that tend to commingle, this close contact facilitates the spread of the virus.

EVA can also be transmitted venereally during breeding—either naturally or by artificial insemination. When a mare, gelding, or sexually immature colt contracts the disease, the animal will naturally eliminate the virus and develop a strong immunity to reinfection. Infected stallions, on the other hand, are very likely to become virus carriers for a long time. Once stallions are in the carrier state, they transmit the virus to mares during breeding.

Although the mare will eliminate the virus easily, a pregnant mare infected with EVA may pass the virus to her unborn fetus. As determined by the stage of the pregnancy, the fetus can become infected, die, and be aborted. If the infected foal is born, it will live for only a few days.

Clinical Signs

Many horses infected with EVA are asymptomatic. When clinical signs do appear in the acute stage of the disease, they can include any or all of the following: fever, nasal discharge, loss of appetite, respiratory distress, skin rash, muscle soreness,

conjunctivitis, and depression. Other clinical signs are swelling around the eyes and ocular discharge, swollen limbs, swollen genitals in stallions, and swollen mammary glands in mares. Abortion in pregnant mares is also a symptom of EVA. Abortion rates in EVA-infected mares range from 10 percent to 70 percent.

Diagnosis

Horse owners should suspect EVA when respiratory symptoms accompany an abortion in a mare. Because the clinical signs of EVA are similar to those of other respiratory disease and no characteristic lesions are found in EVA-aborted fetuses, only diagnostic tests can confirm the disease. Virus isolation can be attempted from swabs of the nose, throat, or eyes; semen, placentas, or fetal tissue; and blood samples. The most common method of diagnosis is testing blood for the neutralizing antibodies of the virus. Although presence of these antibodies alone does not indicate active infection, it does signify that EVA exposure has occurred. The signs of active infection are very high levels of antibodies on a single sample or a rising antibody titer from paired blood samples collected 14 to 28 days apart.

Treatment

Although there is no specific treatment for EVA, care should include rest and, in selected cases, antibiotics, which may decrease the risk of secondary bacterial infection. Adult horses recover completely from the clinical disease. However, the virus commonly persists in the accessory glands of recovered stallions, and thus these carrier stallions continue to shed the virus for years and remain a significant source of infection.

Prevention

A safe, effective, and low-cost avirulent live-virus vaccine is now available. Combining this vaccine with isolation of the vaccinated animal from noninfected horses can prevent the spread of EVA. Because properly vaccinated EVA-negative stallions do not become carriers, all EVA-negative colts less than 270 days old should be vaccinated. The vaccine is not approved for use in pregnant mares.

All vaccinated horses should receive yearly boosters to protect against infection and, for the stallions, to prevent the development of a carrier state.

The EVA Uniform Methods and Rules contain minimum standards for detecting, controlling, and preventing EVA. These may be found at <http://www.aphis.usda.gov/vs/nahps/equine/eva> or obtained by contacting the local APHIS–VS Area Office.

Slaughter Horse Transport Program

New regulations for the transportation of horses to slaughter became effective on December 7, 2001. These regulations fulfill USDA's responsibility under the 1996 farm bill to ensure the proper care of horses without inhibiting the commercially viable transport of these animals to slaughter facilities. The regulations address the food, water, and rest that must be provided to the animals. Owner-shippers of horses are required to take certain actions in loading and transporting the animals and, in addition, certifying that the commercial transportation meets certain requirements by completing the owner-shipper certificate. Special backtags, available from the APHIS-VS Area Office, are required to identify the slaughter horses during transport. In addition, the 2001 regulations prohibit the commercial transportation to slaughter facilities of horses considered to be unfit for travel, the use of electric prods, and, by 2006, the use of double-deck trailers.

Since 1989, about 2 million horses have been slaughtered at USDA-approved horse slaughter plants. Although the number of horses slaughtered in the United States has fallen substantially over the years, 58,736 were slaughtered during 2004. These horses—some quite old, some lame, and some blind—are sold at auction terminals and then transported in double-deck, straight, or gooseneck trailers to a plant located in the United States, Canada, or Mexico. The program's goal is to ensure that equines destined for slaughter are handled and transported in a humane way.

The program activities have been aimed at ensuring that truckers, horse owners, stakeholders, and slaughter-plant personnel within the United States and Canada are conversant with the new regulations and their implementation. APHIS-VS developed and distributed a guidebook, video, truckers' leaflet, posters, and a revised owner-shipper certificate with instructions. These materials provide useful information and guidance to stakeholders involved in handling or transporting horses to slaughter. This information is available from the APHIS Web site at http://www.aphis.usda.gov/vs/nahps/equine/horse_transport or may be obtained in hard copies from the APHIS-VS Area Office.

Aquaculture

APHIS provides agricultural producers with a broad range of cooperative programs for protecting the health of animals and plants. Aquaculture, the managed production of aquatic plants and animals, is growing faster than any other segment of U.S. agribusiness. Because of this rapid expansion, accredited veterinarians are becoming integral to the practice of aquaculture.

APHIS programs currently serve important aspects of both plant and animal aquaculture—especially involving disease control and eradication, pest prevention, and wildlife damage management. APHIS is also involved in facilitating the import and export of aquacultural products because of increased global trade.

Proposed National Aquatic Animal Health Plan

APHIS–VS is one of three Federal agencies developing a National Aquatic Animal Health Plan (NAAHP) under the auspices of the Joint Subcommittee on Aquaculture (JSA). The JSA, a Federal interagency group authorized by the National Aquaculture Act, serves to coordinate aquaculture efforts in the various Federal agencies. The JSA has many task forces. The National Aquatic Animal Health Task Force (NAAHTF) has been charged to develop the NAAHP. The rationale for developing such a plan is to protect our country's wild and cultured resources, support efficient aquaculture, achieve efficient and predictable commerce, and meet the United States' national and international trade obligations.

At press time [April 2005], the first four draft chapters of the plan have been circulated to the JSA and stakeholders. Draft chapters can be found on APHIS' Web site at **<http://www.aphis.usda.gov/vs/aqua/naah_plan.html>**. Readers may submit comments on the draft chapters by sending the comments in an e-mail to **<naahp@aphis.usda.gov>**. The target completion date for draft chapters of the NAAHP is June 2006 with implementation to follow.

It is expected that accredited veterinarians will play a role in carrying out APHIS activities as they relate to aspects of the NAAHP.

National Certification and Inspection Program

VS' National Certification and Inspection Program has two components:

(1) voluntary aquatic animal-health certification procedures and laboratory-approval procedures for fish farms that export internationally and (2) rules for the importation of aquatic animals and their products. These two complementary aspects of the program ensure that foreign diseases notifiable to the Office International des Epizooties (OIE) will be reported.

Accredited veterinarians have a vital role in signing certificates of veterinary inspection based on information gathered from farm inspections and onsite sample collections and laboratory submissions. In most cases, herd health management is provided by accredited veterinarians for the commercial salmon industry with increasing utilization of full-time veterinarians in other marketable crop groups like tropical and ornamental fish.

Specialization of veterinary expertise is increasing as the number of APHIS-endorsed certificates of veterinary inspection for international countries also rises.

Animal Health Emergency Management

The strength and success of the U.S. agricultural economy is due in large part to the bonds forged by Government, veterinarians, and producers in preventing, controlling, and eradicating foreign animal diseases (FADs). In an era characterized by unprecedented levels of international transportation and trade, the threats posed by FADs (either accidentally or intentionally introduced) have never been greater.

FADs can enter the United States accidentally through the importation of infected animals or animal products. Such diseases can be carried inadvertently into our country via contaminated clothing, shoes, or other objects. One or more diseases can also be introduced as an act of terrorism.

Once an FAD has taken hold, it may be very difficult to control and eradicate because of high potential animal exposure resulting from high livestock concentrations and numerous movements of market-bound animals. Pathogens spread by wildlife can pose an additional serious problem.

The unchecked spread of animal disease pathogens in agricultural environments would have a disastrous impact on the U.S. economy. The failure of individual farms would have a ripple effect on many segments of the U.S. economy, including disruption of livestock marketing and trade. Other significant costs would be incurred in the course of controlling the spread of disease pathogens by animal depopulation, cleaning and disinfecting livestock environments, and disposing of animal carcasses on a mass scale. Furthermore, all these activities generate concern about the environment.

Outbreaks of FADs in recent decades (including Venezuelan equine encephalomyelitis in Texas in 1971, exotic Newcastle disease in California in 1972 and 2002–03, high-pathogenicity AI in 1983 and 1984, and foot-and-mouth disease in Taiwan in 1998 and the United Kingdom in 2001) have underscored our Nation's concern about the dangers they pose to U.S. livestock and poultry populations. Our animal population has no immunity to such diseases, which, if introduced, could cause potentially catastrophic losses to the American animal industry and even threaten the availability of the safe, wholesome, affordable, abundant food supply Americans currently enjoy.

Emergency Response Structure

In the event of a major animal health emergency in the United States, the appropriate local, State, Tribal, and Federal governments and their partners (such as industry) in the private sector must respond in a coordinated, mutually supportive manner to (1) determine the nature of the disease outbreak or other emergency, (2) initiate an appropriate response (e.g., eliminate or control disease), and (3) help facilitate recovery (e.g., the resumption of business and trade).

The National Animal Health Emergency Management System (NAHEMS)

A Federal-, State-, and industry-coordinated emergency response system established in 1996, NAHEMS is designed to help the United States prevent, prepare for, respond to, and recover from any foreign disease introduction causing significant economic loss. Although a host of protective measures, including strictly enforced import regulations, are in place to protect American agriculture, APHIS and its State and industry partners are prepared to take immediate action to bring an FAD introduction under control and to eradicate it.

The National Incident Management System (NIMS)

Since the terrorist attacks in September 2001, the Federal Government has reevaluated how to respond to emergencies on U.S. soil. In 2003, the Department of Homeland Security (DHS) established the National Incident Management System (NIMS). This presidentially mandated system, coordinated through DHS, will provide a consistent nationwide approach for Federal, Tribal, State, and local governments to work effectively and efficiently together to prepare for, prevent, respond to, and recover from domestic incidents, regardless of cause, size, or complexity.

NIMS provides a managerial and organizational structure for use in accomplishing these objectives. Use of NIMS also provides the agricultural community with ready access to the human and material resources of the wider emergency management community, thus facilitating the potential mobilization of large-scale resources for response to major emergencies.

Under most circumstances, the existing well-trained cadre of local, State, and Federal animal health professionals is sufficient to cope with a disease outbreak threatening American agriculture. In the event of a sizable regional or national disease outbreak, however, the agricultural community would need help from the larger emergency management community to avoid being overwhelmed by the logistical, operational, and administrative demands of a rapidly changing situation.

The U.S. agricultural community is accelerating its efforts to prepare to respond to a potentially major epidemic by reaching out to the emergency management community. This outreach involves learning and using the NIMS as well as building partnerships with other emergency management agencies and groups for coordinated responses to various emergency scenarios. Such partnerships are vital to planning for the mobilization of large-scale human and material resources to address potentially catastrophic animal health emergencies.

One key component of NIMS is the Incident Command System (ICS), which is the managerial and organizational structure NIMS provides for use with emergencies that may increase in size or evolve in complexity—whether within a few hours or over several days, weeks, or months.

Animal Emergency Response Organizations (AEROs)

To minimize the danger of a catastrophic multi-State FAD outbreak, APHIS, in cooperation with its State and industry partners, is expanding the United States' ability to respond to any animal emergency by developing State-level AEROs that are nationally coordinated. These organizations, which draw upon the principles of NIMS, are designed to integrate easily with each State's emergency management system as well as the new National Response Plan under which agencies will mobilize to support State and local authorities in addressing such emergencies.

Through AEROs, prequalified specialists (trained in both animal health and emergency management principles) will stand ready to respond rapidly and efficiently as needed to eradicate an FAD or respond to other animal emergencies swiftly and efficiently. These specialists will work in teams and will travel as necessary to various locations within their State and be available to help other States as well.

FAD Recognition and Initial Response

The local veterinary practitioner, who routinely first detects the possible presence of an FAD, is one of the most important figures in the Government–veterinarian–producer partnership formed to prevent and respond to FADs. The veterinarian's alertness to the possibility of serious disease and prompt action in notifying the APHIS–VS Area Office or State animal health officials can mean the difference between immediate disease containment and a protracted control and eradication effort involving large-scale economic consequences and possibly requiring years to complete. Once the notification is made, an FAD diagnostician (State or Federal) visits the premises, investigates the report, and takes samples. On the basis of results of this analysis, the FAD diagnostician makes a field diagnosis, initiates appropriate control measures, ships tissue samples to the National Veterinary Services Laboratories (NVSL), and informs the APHIS–VS Area Office or State animal health officials.

After the presence of disease has been confirmed and Government regulatory controls have been put in place for pathogen control, local veterinarians typically continue to play key roles in fighting disease—not only by increasing public awareness of disease-control measures but also by supporting and/or joining the disease-control and -eradication effort. Joining the effort is done through the National Animal Health Emergency Veterinary Reserve Corps (NAHERC), a program that provides temporary Federal status to private professionals. To join, please contact your nearest APHIS–VS Area Office.

AERO and Interstate and Interagency Cooperation

At the outset of an outbreak or other animal emergency, a local Animal Emergency Response Organization (AERO) response team is composed of selected personnel from within the local areas (e.g., the Oklahoma Veterinary Emergency Response Team is the locally based component of the nationally coordinated AERO). Because no State will have sufficient resources alone, additional support from other State-based AEROs or one of APHIS' six national incident management teams will be mobilized as needed to support any given State's local team or teams. These additional personnel are requested through regional and national emergency operations centers managed by VS.

When an incident occurs, the appropriate AVIC, the State animal health official, and State emergency managers will delegate their authority to take appropriate action to the designated Incident Commander. If multiple Incident Command Post(s) are needed in the State, an Area Command may be established to coordinate the activities of the Incident Commanders through this organization. The AVIC and State animal health official will continue to set priorities for the Incident Commanders and for use of resources.

In any given incident, one of three levels of response may be appropriate and commensurate with the severity of the outbreak or other emergency:

- A local or limited response: This level of response is managed by local, State, Tribal, Federal, and industry officials with response coordination provided primarily at the State and regional levels and with national-level consultation and consequence management (like trade issues).
- A regional response: A regional response is managed by local, State, Tribal, Federal, and industry officials—in some cases, with the involvement of the appropriate State emergency management agency as specified in State animal health emergency response plans. National-level crisis management, response coordination, consultation, and consequence management are required.
- A national response: A national response requires the combined efforts of local, State, Tribal, Federal, and industry agricultural officials; coordination from nonagricultural personnel from Government bodies like DHS; and the support of the private and volunteer sectors in national-level crisis management, response coordination, consultation, and consequence management.

Notifiable Diseases and Conditions

As an accredited veterinarian, you are responsible for notifying the State animal health official or AVIC of any undiagnosed or unusual disease conditions that are notifiable, foreign, or both. The State animal health official or AVIC will determine how the case is to be handled and give you specific instructions at that time. If the AVIC of your State determines that an investigation is warranted, a Federal FAD Diagnostician will be assigned to the case. Most States provide a list of reportable diseases that should be used to supplement the list of diseases that follows. Call your State animal health official or APHIS–VS Area Office for such a list.

Foreign or exotic animal diseases often present themselves as clinical disease conditions that do not respond to therapy. Report to your State animal health official or AVIC (1) any suspicious clinical or necropsy findings accompanied by a history of the diseased animals' recent contact with either people or animals that have just returned from a foreign country or (2) any disease of unknown etiology causing high mortality or morbidity.

You should be suspicious of the following signs:

- High morbidity, high mortality;
- Signs that do not fit the classical picture;
- Vesicular lesions;
- Severe abortion storms of unknown etiology;
- Hemorrhagic septicemia;
- Severe respiratory conditions;
- Pox or lumpy skin conditions;
- Poor or no response to treatment when response is expected;
- Suspicious findings at necropsy;
- History of foreign travel, foreign visitors, and foreign mail or gifts or importation of animals, embryos, or semen;
- CNS diseases (or undiagnosed encephalitic conditions);
- Mucosal diseases;
- Larvae in wounds;
- Avian disease with acute deaths or CNS signs;
- Unusual myiasis or acariasis (exotic flies, mites, ticks, etc.); or
- Unusual or unexplained illness or symptoms.

Guidelines

If you suspect a highly contagious foreign or notifiable disease, phone the AVIC or State animal health official directly from the farm or premises (see your State listing in appendix C).

Have the following information available:

- Producer or owner name, address, county, and phone number;
- Directions to the farm or premises;
- Complete clinical history;
- Number and species of animals affected and number and species of animals susceptible and their disease status;
- Conditions you have already ruled out;
- Any treatments given and response noted; and
- Contact information for you, including your name, address, and relevant phone numbers.

The following diseases listed by OIE are considered by APHIS to be foreign to the United States and must, therefore, be reported.

Multiple Species Diseases

- Heartwater
- New World screwworm (*Cochliomyia hominivorax*)
- Old World screwworm (*Chrysomya bezziana*)
- Foot-and-mouth disease
- Lumpy skin disease
- Rift Valley fever

Cattle Diseases

- Bovine babesiosis
- Theileriosis
- Trypanosomosis (tsetse-transmitted)
- Bovine spongiform encephalopathy
- Rinderpest
- Contagious bovine pleuropneumonia

Sheep and Goat Diseases

- Contagious caprine pleuropneumonia
- Nairobi sheep disease
- Peste des petits ruminants

Equine Diseases

- Contagious equine metritis
- Dourine
- Epizootic lymphangitis
- Equine piroplasmosis
- Glanders
- Horse pox
- Surra (*Trypanosoma evansi*)
- Venezuelan equine encephalomyelitis
- African horse sickness

Swine Diseases

- Enterovirus encephalomyelitis
- African swine fever
- Classical swine fever
- Swine vesicular disease

Avian Diseases

- Fowl typhoid
- Highly pathogenic avian influenza
- Newcastle disease

Lagomorph Diseases

- Myxomatosis
- Tularemia
- Rabbit hemorrhagic disease

Other Diseases

- Leishmaniosis

Fish Diseases

- Epizootic hematopoietic necrosis
- Infectious hematopoietic necrosis
- *Oncorhynchus masou* virus disease
- Spring viremia of carp
- Viral hemorrhagic septicemia
- Channel catfish virus disease
- Viral encephalopathy and retinopathy
- Infectious pancreatic necrosis
- Infectious salmon anemia

- Epizootic ulcerative syndrome
- Bacterial kidney disease (*Renibacterium salmoninarum*)
- Enteric septicemia of catfish (*Edwardsiella ictaluri*)
- Piscirickettsiosis (*Piscirickettsia salmonis*)
- Gyrodactylosis (*Gyrodactylus salaris*)
- Red sea bream iridoviral disease
- White sturgeon iridoviral disease

Mollusc Diseases

- Bonamiosis (*Bonamia exitiosus*, *Bonamia ostreae*, and *Mikrocytos roughleyi*)
- MSX disease (*Haplosporidium nelsoni*)
- Marteilirosis (*Marteilia refringens* and *Marteilia sydneyi*)
- Mikrocytosis or Denman Island disease (*Mikrocytos mackini*)
- Perkinsosis (*Perkinsus marinus* and *Perkinsus olseni/atlanticus*)
- Sea side organism disease (*Haplosporidium costale*)
- Withering syndrome of abalone (*Candidatus xenohaliotis californiensis*)

Crustacean Diseases

- Taura syndrome
- White spot disease
- Yellowhead disease
- Tetrahedral baculovirosis (*Baculovirus penaei*)
- Spherical baculovirosis (*Penaeus monodon*-type baculovirus)
- Infectious hypodermal and hematopoietic necrosis
- Crayfish plague (*Aphanomyces astaci*)
- Spawner-isolated mortality virus disease

In addition to the preceding diseases, the following VS program diseases are reportable diseases even though they are not foreign to the United States:

- Brucellosis
- Tuberculosis
- Pseudorabies
- Scrapie
- Avian influenza
- Infectious salmon anemia
- Chronic wasting disease
- Equine infectious anemia

Please note that other disease entities (e.g., Johne's disease) may be reportable at the State level. Check your State listing of reportable diseases.

OIE and International Standards

The OIE was established in Paris, France, in 1924 with the signing of an international agreement by 28 countries. As of 2004, the organization has 166 member nations, each of which is represented by a delegate who, in most cases, is the chief veterinary officer of the country. The mission of the OIE (the world organization for animal health) is to prevent the spread of animal diseases. To achieve this mission, the OIE has six primary functions: (1) to ensure transparency in the global animal disease and zoonosis situation; (2) to collect, analyze, and disseminate scientific veterinary information; (3) to provide expertise and encourage international solidarity in the control of animal diseases; (4) within its mandate under the World Trade Organization (WTO), Sanitary and Phytosanitary (SPS) Agreement, to safeguard world trade by publishing health standards for international trade in animals and animal products; (5) to improve the legal framework and resources of national veterinary services; and (6) to provide a better guarantee of the safety of foods of animal origin and to promote animal welfare through a science-based approach.

Each member country reports the animal diseases it detects in its territory. OIE then disseminates the information to other countries, which can take necessary preventive action. One of OIE's main missions is to improve knowledge of, as well as the transparency of, the world animal health situation. To achieve these objectives, OIE manages the world animal health information system, which is based on the commitment of member countries to declare the main animal diseases, including zoonoses, through OIE. The United States is a member country and takes very seriously its commitment to reporting diseases occurring here based on OIE requirements. As of January 2005, a single list of notifiable diseases was implemented by the OIE.

The following diseases are currently included in the list.

Multiple Species Diseases

- Anthrax
- Aujeszky's disease
- Echinococcosis/hydatidosis
- Heartwater
- Leptospirosis
- Q fever
- Rabies
- Paratuberculosis
- New world screwworm (*Cochliomyia hominivorax*)
- Old world screwworm (*Chrysomya bezziana*)

- Trichinellosis
- Foot-and-mouth disease
- Vesicular stomatitis
- Lumpy skin disease
- Bluetongue
- Rift Valley fever

Cattle Diseases

- Bovine anaplasmosis
- Bovine babesiosis
- Bovine brucellosis
- Bovine genital campylobacteriosis
- Bovine tuberculosis
- Bovine cysticercosis
- Dermatophilosis
- Enzootic bovine leukosis
- Hemorrhagic septicemia
- Infectious bovine rhinotracheitis/infectious pustular vulvovaginitis
- Theileriosis
- Trichomonosis
- Trypanosomosis (tsetse-transmitted)
- Malignant catarrhal fever
- Bovine spongiform encephalopathy
- Rinderpest
- Contagious bovine pleuropneumonia

Sheep and Goat Diseases

- Ovine epididymitis (*Brucella ovis*)
- Caprine and ovine brucellosis (excluding *B. ovis*)
- Caprine arthritis/encephalitis
- Contagious agalactia
- Contagious caprine pleuropneumonia
- Enzootic abortion of ewes (ovine chlamydiosis)
- Ovine pulmonary adenomatosis
- Nairobi sheep disease
- Salmonellosis (*S. abortusovis*)
- Scrapie
- Maedi-Visna

- Peste des petits ruminants
- Sheep pox and goat pox

Equine Diseases

- Contagious equine metritis
- Dourine
- Epizootic lymphangitis
- Equine encephalomyelitis (Eastern and Western)
- Equine infectious anemia
- Equine influenza
- Equine piroplasmosis
- Equine rhinopneumonitis
- Glanders
- Horse pox
- Equine viral arteritis
- Japanese encephalitis
- Horse mange
- Surra (*Trypanosoma evansi*)
- Venezuelan equine encephalomyelitis
- African horse sickness

Swine Diseases

- Atrophic rhinitis of swine
- Porcine cysticercosis
- Porcine brucellosis
- Transmissible gastroenteritis
- Enterovirus encephalomyelitis
- Porcine reproductive and respiratory syndrome
- African swine fever
- Classical swine fever
- Swine vesicular disease

Avian Diseases

- Avian infectious bronchitis
- Avian infectious laryngotracheitis
- Avian tuberculosis
- Duck virus hepatitis
- Duck virus enteritis
- Fowl cholera

- Fowl pox
- Fowl typhoid
- Infectious bursal disease (Gumboro disease)
- Marek's disease
- Avian mycoplasmosis (*M. gallisepticum*)
- Avian chlamydiosis
- Pullorum disease
- Highly pathogenic avian influenza
- Newcastle disease

Lagomorph Diseases

- Myxomatosis
- Tularemia
- Rabbit hemorrhagic disease

Bee Diseases

- Acariosis of bees
- American foulbrood
- European foulbrood
- Nosemosis of bees
- Varroosis

Fish Diseases

- Epizootic hematopoietic necrosis
- Infectious hematopoietic necrosis
- *Oncorhynchus masou* virus disease
- Spring viremia of carp
- Viral hemorrhagic septicemia
- Channel catfish virus disease
- Viral encephalopathy and retinopathy
- Infectious pancreatic necrosis
- Infectious salmon anemia
- Epizootic ulcerative syndrome
- Bacterial kidney disease (*Renibacterium salmoninarum*)
- Enteric septicemia of catfish (*Edwardsiella ictaluri*)
- Piscirickettsiosis (*Piscirickettsia salmonis*)
- Gyrodactylosis (*Gyrodactylus salaris*)
- Red sea bream iridoviral disease
- White sturgeon iridoviral disease

Mollusc Diseases

- Bonamiosis (*Bonamia exitiosus*, *Bonamia ostreae*, and *Mikrocytos roughleyi*)
- MSX disease (*Haplosporidium nelsoni*)
- Marteilirosis (*Marteilia refringens* and *Marteilia sydneyi*)
- Mikrocytosis or Denman Island disease (*Mikrocytos mackini*)
- Perkinsosis (*Perkinsus marinus* and *Perkinsus olseni/atlanticus*)
- Sea side organism disease (*Haplosporidium costale*)
- Withering syndrome of abalone (*Candidatus xenohaliotis californiensis*)

Crustacean Diseases

- Taura syndrome
- White spot disease
- Yellowhead disease
- Tetrahedral baculovirosis (*Baculovirus penaei*)
- Spherical baculovirosis (*Penaeus monodon*-type baculovirus)
- Infectious hypodermal and hematopoietic necrosis
- Crayfish plague (*Aphanomyces astaci*)
- Spawner-isolated mortality virus disease

Other Diseases

- Leishmaniosis

Cleaning and Disinfection

Cleaning and Disinfecting Pens, Vehicles, etc.

As an accredited veterinarian, you are required to help prevent the spread of diseases through cleanliness and the use of disinfectants. In situations involving a contagious disease, vehicles, holding pens, and other facilities must be cleaned and disinfected. As an accredited veterinarian, you must be prepared to make recommendations as to the disinfectant and the techniques to be used for cleaning and disinfecting.

When dealing with certificates of veterinary inspection and the movement of animals, the accredited veterinarian must be prepared to certify that transportation vehicles have been properly cleaned and disinfected before animals can be moved across State or international borders. In 9 CFR part 91.3 (d), it is stipulated that “the origin health certificate accompanying animals shall be accompanied by a statement from the issuing accredited veterinarian or inspector that the means of conveyance or container has been cleaned and disinfected since last used for animals with a disinfectant approved under part 71.10 of this chapter, prior to loading, or that the carrier or container has not previously been used in transporting animals.”

As a member of the professional community, the accredited veterinarian should be prepared to consult on disinfectants to be used for various disease threats. This is especially critical given homeland security concerns. The accredited veterinarian should cultivate a broad knowledge of the general nature of disinfectants and sources from which suitable chemicals can readily be obtained rather than just superficial information about specific commercial brands.

You need to be clear, before you approach the task, whether you are disinfecting or sterilizing. Disinfecting reduces the number of pathogenic micro-organisms below a harmful level; sterilizing eliminates all micro-organisms (and spores). It is impractical to consider sterilizing a corral, barn, paddock, or truck.

Safety

Worker Protection Standards (WPS) are a specific portion of the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA; Title 40 CFR part 170), which requires the protection of employees from agricultural pesticides. If you supervise individuals who will be applying pesticides, in this case disinfectants, read the worker protection standards on the package closely. Several pertinent Web sites on Worker Protection Standards are available that should be consulted. Many of these sites contain self-study materials that should be required reading for individuals who will actually be handling disinfectants and applying them.

Personal protective equipment—boots, coveralls, rain suits (including both pants and jackets with hoods), gloves specific to the materials being handled, face shields when applying disinfectants, and goggles when handling concentrated powders or solutions—should be utilized whenever appropriate. Respirators and chemical-resistant suits may be required for some solutions.

Cleaning

Cleaning is the most important step in the disinfection process. The cleaning process can be broken down into four basic steps: dry clean, wet wash, rinse, and dry.

1. Dry clean the area to be disinfected with a shovel and broom, an industrial vacuum cleaner, or high-pressure air. This process should begin with the ceiling and continue down the walls with special attention to any overhead pipes, ducts, and lights as well as window sills and molding. Suitable personal protective equipment should be worn if significant dust is raised in the process. When this step is finished, there will be no loose dirt, dust, feed, bedding, manure, hay, straw, or any other organic material left on surfaces. The surfaces will not necessarily be visibly clean when this step is complete.
2. Wet wash all of the surfaces with a soap solution or detergent. During this part of the process, it will be necessary to scrub the surfaces vigorously to break down any biofilm that may be present. The scrubbing can be done with rags on smooth surfaces, although the commercially available plastic or metal scrub pads are much more efficient. Rough surfaces should be scrubbed with a stiff brush to ensure that they are cleaned as completely as possible. Deep cracks, crevices, pits, pores, or other surface irregularities should be given particular attention to dislodge accumulated grime. Special care should be taken around electrical equipment. Bring in adequate lighting and turn off electrical power if there is danger of getting cleaning solutions into fixtures. Remove thermostats, timing devices, motor controls, and remote sensing equipment before wet washing. When this step is adequately completed, the surfaces will be visibly clean. The moisture on surfaces will spread evenly, wetting the surface completely. There will be no beading of moisture, which would indicate the presence of oil or grease.
3. Rinse the surface to remove all traces of soap or detergent. A residue of soap or detergent should not be left on the surface because it may react unfavorably with the disinfectant. When this step is complete, the water film will “wet” the surfaces and there will be no beading.
4. Dry the area to remove all moisture. Removing the moisture promptly will protect equipment and surfaces from deterioration. Excess moisture will also dilute the disinfectant to be applied to the surfaces, and there is no practical way to compensate for the dilution when mixing the disinfectant.

Definition of Disinfectant

A disinfectant is an agent or chemical that destroys vegetative forms of harmful micro-organisms, usually on inanimate objects. It is important to note that not all agents work against all micro-organisms and that most disinfectants are likely to be less effective against spores than against the vegetative form of the micro-organism.

Regulation of Disinfectants

Disinfectants are regulated by EPA under the FIFRA in Title 40 CFR. Individual States also have regulations that may be stricter than Federal regulations. The information that follows will provide you with a general knowledge of the chemicals that can be used as disinfectants and is intended to give you the background to make intelligent decisions in selecting EPA-approved disinfectants. Knowing how to use a chemical does not give you permission to use it. Any product that you use as a disinfectant must have an EPA product registration number and must be used according to label directions.

In two special cases, chemicals have been approved by FIFRA under Section 18 for use by State officials and the general public against foot-and-mouth disease. Those two special cases are sodium hypochlorite in concentrations up to 12.5 percent and acetic acid at a concentration of 4 to 5 percent. Specific Section 18 exemptions may be applied for and publicized in the future to combat FAD incursions.

Disinfecting

Disinfection is the process of using an agent or chemical that destroys or removes vegetative forms of harmful micro-organisms in an area or on a surface. Over time, multiple repetitions of cleaning and disinfecting might reach the point of sterility, but from a practical point of view the aim when disinfecting is to diminish the population of micro-organisms to a level at which they are no longer harmful—not eliminate them entirely. It is entirely impractical to consider each instance of cleaning and disinfecting to be an exercise in sterilizing.

Selecting and Using Disinfectants

For specific guidance on disinfectant selection and use in association with a disease control program or outbreak situation, please contact the APHIS–VS Area Office. For additional general information regarding disinfectants, see <http://www.aphis.usda.gov/vs> and <http://www.biosecuritycenter.org> on the Web.

Overview—As a first step in disinfectant selection, select a family of disinfectants that will be effective against the micro-organism(s) of interest. Then determine what companies offer EPA-approved disinfectants containing the active agent you have selected. Get label information on each possible disinfectant so that you can determine dilution requirements and check to see that the company's EPA-approved label indicates effectiveness against the micro-organism of interest.

EPA approves the use of disinfectants exactly as stated on the label. The dilution listed on the label must be followed exactly unless you have a Section 18 exemption allowing a different dilution. Failure to follow label directions makes the individual and the supervisor liable. Disinfectants are tested and proven effective at the specified dilution. Safety is clearly an issue because higher concentrations of disinfectants are often more dangerous to personnel. Disinfectants must be applied according to label directions. Disinfectant wet time should be observed carefully. A surface to be disinfected should remain “shiny” wet for at least 10 minutes; damp is not adequate. Porous and rough surfaces will require more disinfectant than smooth surfaces.

The following subsection briefly describes some of the disinfectants that are available. Please note, however, that the list is not exhaustive.

Physical Disinfecting Agents—

1. **Heat:** An increase in temperature causes an increase in chemical activity, and that in turn causes most disinfectants to work better at higher temperatures.
2. **Moist heat (e.g., hot water, autoclave, steam):** This is the most effective physical disinfection method. Through the coagulation of protein, all vegetative micro-

organisms can be killed by being exposed to a temperature of 80 °C (176 °F) for 10 minutes. In the case of spores, anthrax spores will be killed by exposure to a temperature of 100 °C (212 °F) for 10 minutes, but *Clostridium botulinum* and *C. subtilis* spores can withstand boiling for hours.

3. **Pasteurization:** This is one specialized application of moist heat. It is important to note that pasteurization does not kill all of the micro-organisms in milk or other liquids. It is intended to reduce bacterial contamination and, in the case of milk, to kill *Mycobacterium bovis*, *Brucella abortus*, and *Salmonella* without altering the flavor or nutritional quality of the milk any more than necessary. The phosphatase test is used to check for adequate milk pasteurization because phosphatase is destroyed by heat sufficient to kill the listed pathogens.
4. **Autoclaving:** The use of autoclaving for disinfection is based on the fact that water boils at higher temperatures when pressure is raised. Water boils at 100 °C (212 °F) at sea level, whereas when atmospheric pressure reaches 15 lb/in², it boils at 121 °C (250 °F). The higher temperature and moist heat significantly reduce the time necessary to penetrate any porous materials in the autoclave.
5. **Dry heat (e.g., flame, baking):** Dry heat is less effective than moist heat. Vegetative micro-organisms are more resistant to dry heat than they are to moist heat, and spores are even more resistant. Some examples of the application of dry heat include the incineration of carcasses, the heating of a bacterial loop in a Bunsen burner flame, the searing of a surface before sample collection, and the cauterization of a wound.
6. **Radiation:** Radiation is classified as nonionizing or ionizing according to its energy level.
 - Nonionizing radiation includes a spectrum of electromagnetic waves on a continuum from radio waves to infrared, visible, and finally ultraviolet (UV) light.
 - Ionizing radiation is radiation in which each particle or photon has high enough energy to cause ionization within material it encounters. Ionization is the stripping off of electrons from an atom in the material encountered. Each atom with the electron stripped off becomes a positive ion; the electron becomes a negative ion. The biologically lethal effects are caused by DNA strand breakage.
7. **Filtration:** Filters and ultrafilters can be used to remove micro-organisms from gases and fluids. Filtering is used to produce micro-organism-free solutions when other methods would be detrimental to the product (e.g., in the production of fetal calf serum). High-efficiency particulate air filters are used to filter air for surgical suites, laboratories, and industrial processes and to ensure the safety of air discharged from biological safety cabinets.

Soaps and Detergents—Use soaps and detergents for the cleaning step, which is the most important one in cleaning and disinfecting. Proper cleaning will remove up to 99 percent of infectious material and render the surface visibly clean. These agents serve to saponify lipids present in the cell walls of bacteria and in the envelope of many viruses, effectively inactivating them. Soaps and detergents also peptonize proteins, which helps to remove biofilms composed of animal exudates, secretions, and excretions. Disinfection is useless without proper cleaning beforehand; you cannot disinfect soil (manure, dirt, secretions, excretions).

Phenols—Phenols are protoplasmic poisons that can readily be absorbed through the skin. In concentrated solution, they cause severe burns and are fatal if swallowed. Phenols are effective against both gram-positive and gram-negative bacteria and most of the enveloped viruses. One of the substituted phenols, 2-phenylphenol, is particularly effective against *Mycobacterium* species, which are normally quite refractory to disinfectants. Note that nonenveloped viruses, and bacterial spores at ambient temperature, are very resistant to phenols.

Acids—The hydrogen ion (H^+) is bacteriostatic in the pH range of 3 to 6 and bactericidal when the pH drops below 3. The following acids can be used as disinfectants:

1. **Carbolic acid:** This is a water solution of phenol and is mentioned in 9 CFR part 71.10(a)(2) as a permitted disinfectant. The requirements of 9 CFR part 71.10(a)(2) state that liquefied phenol (U.S. Pharmacopoeia [U.S.P] strength 87 percent phenol) should be in the proportion of at least 6 fluid ounces to 1 gallon of water.
2. **Cresylic acid:** This is a combined fraction of cresols and xyenols and is also mentioned in 9 CFR part 71.10(a)(1) as a permitted disinfectant. The requirements of 9 CFR part 71.10(a)(1) state that cresylic disinfectant should be in the proportion of at least 4 fluid ounces to 1 gallon of water. As a disinfectant, cresylic acid is more effective than phenol.
3. **Mineral acids:** These can be used for disinfectants, but they are highly corrosive. Hydrochloric acid (HCl) is sporicidal and has been used at a concentration of 2.5 percent as a soak to disinfect hides potentially contaminated with anthrax spores. As an example that all disinfectant materials are not uniformly effective, it should be noted that sulfuric acid (H_2SO_4) is **not** sporicidal.
4. **Organic acids:** These are effective disinfectants and are less corrosive than mineral acids. Citric acid is readily available in the food industry and has been used as an additive to detergents to disinfect for the virus that causes foot-and-mouth disease. Acetic acid (5 percent white vinegar) is being routinely used to wipe down horses coming into the United States from other countries in an attempt to ensure that they are not carrying the foot-and-mouth virus on their coat.

Alkalis—The hydroxyl ion (OH^-) inhibits or kills most bacteria and viruses when the pH is greater than 9. The following alkalis can be used as disinfectants:

1. **Sodium hydroxide (NaOH):** Commonly called caustic soda or lye, sodium hydroxide is one of the most common alkalis used as a disinfectant. Its use as a permitted disinfectant is recognized in 9 CFR part 71.10(a)(4), where these instructions are given: "Sodium hydroxide (Lye) prepared in a fresh solution in the proportion of not less than 1 pound avoirdupois of sodium hydroxide of not less than 95 percent purity to 6 gallons of water, or one 13 1/2 ounce can to 5 gallons of water. Due to the extreme caustic nature of sodium hydroxide solution, precautionary measures such as the wearing of rubber gloves, boots, raincoat, and goggles should be observed. An acid solution such as vinegar shall be kept readily available in case any of the sodium hydroxide solution should come in contact with the body." The proportions listed provide a working solution of 2 percent, which is adequate for most disinfectant uses. Sodium hydroxide is not sporicidal unless it is used at a concentration greater than 5 percent. This material is highly caustic and must be used with extreme caution. When mixing, remember always to add lye to water, not water to lye.
2. **Anhydrous sodium carbonate (Na_2CO_3):** Known as soda ash, anhydrous sodium carbonate is an effective cleaning agent. A 4-percent solution (1 lb in 3 gal water) of anhydrous sodium carbonate is used for washing vehicles and is currently used for cleaning the hooves of horses being imported into the United States. With the addition of 0.1-percent sodium silicate, 4-percent anhydrous sodium carbonate is the only disinfectant for use on aircraft. The requirements of 9 CFR part 91.41 give specific instructions for aircraft disinfection: "Prior to loading of animals, the stowage area of aircraft to be used to export animals under the provisions of this part shall, under the supervision of an inspector, be cleaned and then disinfected using a freshly prepared solution of 4 percent sodium carbonate plus 0.1 percent sodium silicate."
3. **Hydrated sodium carbonate ($\text{Na}_2\text{CO}_3 \cdot 10 \text{H}_2\text{O}$):** Known as washing soda or sal soda, hydrated sodium carbonate has 10 water molecules attached to each molecule of sodium carbonate. To get the same level of disinfectant activity using hydrated sodium carbonate would require roughly three times more dry product than the amount of anhydrous sodium carbonate needed.
4. **Calcium hydroxide (CaOH):** Calcium hydroxide, or air-slaked lime, has been used as a disinfectant and is reasonably effective against many nonspore-forming organisms. When mixed with water, CaOH forms hydroxyl ions and liberates heat ($\text{CaO} + \text{H}_2\text{O} = \text{Ca}(\text{OH})_2 + \text{heat}$). Although it is not sporicidal, it has been used to disinfect premises. At a 20-percent suspension, it is commonly used as whitewash.

Halogens—Halogens are effective disinfectants when adequate cleaning has taken place before their use. Unfortunately, the halogens are totally neutralized and made ineffective by the presence of organic matter. These materials are more effective at an acidic pH. Halogens are highly toxic for aquatic animals, so great care must be taken never to discharge them into a watershed. If discharge into a watershed cannot be avoided, the halogen should be neutralized with sodium thiosulfate at the rate of 5 moles of thiosulfate to 4 moles of halogen.

Sodium Hypochlorite (chlorine)—Sodium hypochlorite (NaOCl) is commonly available as household bleach. Chlorine solutions will decompose fairly rapidly when they are exposed to heat or light. The stock solutions do tend to lose strength when stored. Chlorine is highly sporicidal, and mixing it 50–50 with a solution that is half alcohol and half water potentiates this effect. Chlorine-containing compounds are highly corrosive.

Calcium Hypochlorite—Calcium hypochlorite ($\text{Ca}(\text{OCl})_2$), also called chlorinated lime, is mentioned in 9 CFR part 71.10 (a)(3) as a permitted disinfectant. Chlorinated lime (USP strength, 30-percent available chlorine) should be used in the proportion of 1 pound to 3 gallons of water.

Iodine—Iodine is less reactive than chlorine and dissolves readily in alcohol. However, it is necessary to add potassium iodide to water to dissolve appreciable levels of iodine. As a disinfectant, the spectrum of activity of iodine is similar to that of chlorine. Iodine is somewhat less effective against the nonenveloped viruses than chlorine but is more effective than chlorine in the presence of organic matter.

Peroxide Compounds—

1. **Hydrogen peroxide (H_2O_2):** When fresh, hydrogen peroxide is an effective disinfection agent except in the presence of nonenveloped viruses or acid-fast bacteria. The active agent in disinfection is the hydroxyl free radical ($\cdot\text{OH}$), which destroys micro-organisms through DNA strand breakage and the destruction of enzymes. The solutions of hydrogen peroxide commonly purchased will decompose readily, making it absolutely necessary to ensure that any solution to be used for disinfection is fresh.
2. **Peracetic acid ($\text{CH}_3\text{C}(\text{O})\text{OOH}$):** Peracetic acid is an extremely shock-sensitive explosive in its pure form. It is supplied as a 40-percent solution in acetic acid, which has an open-cup flash point of 40.5°C (105°F) and will spontaneously explode when heated to 110°C (230°F). Modern stabilized disinfectants using peracetic acid are generally mixtures of peracetic acid, hydrogen peroxide, and acetic acid. The level of active ingredient in mixed peracetic acid disinfectant solutions is generally 0.25 percent or less. Peracetic acid alone or with hydrogen peroxide is one of the high-level disinfectants cleared by FDA for processing reusable medical and dental devices.

3. Virkon® S: Virkon S is a buffered peroxide compound with the addition of surfactants and organic acids. In a 1-percent solution, it has a pH of 2.6 and thus would be effective as an acid disinfectant alone. The Material Safety Data Sheet (MSDS) indicates that, in 1-percent solution, Virkon S is nonirritating to skin or eyes. No occupational exposure limit is specified on the MSDS. According to company data, the 1-percent solution has a 10-percent loss of initial activity after 7 days in 350 p/m hard water, and the powder form has a 2.3-percent loss of initial activity after 36 months at 20 °C (68 °F). Packages of dipsticks are available to check the strength of working solutions of this product. As a safety consideration, Virkon S should not be subjected to high temperatures because, when the dry form is heated to 70 °C (158 °F), it will decompose with evolution of sulfur dioxide gas, which is toxic and irritating to skin and eyes and may be fatal if inhaled.

Aldehydes—Aldehydes are chemical compounds of the general formula $RCHO$.

The R group may be aliphatic or aromatic. The aldehydes contain the carbonyl group $C=O$. It is the carbonyl group that determines the chemistry of aldehydes.

- 1. Formaldehyde ($H-COH$):** A gas at room temperature, formaldehyde is used as a gas and as a water solution called formalin. When used as a disinfectant, formaldehyde is less efficacious in the presence of any organic matter. Formaldehyde is sporicidal.
- 2. Glutaraldehyde ($CHO-CH_2-CH_2-CH_2-CHO$):** An oil at room temperature, glutaraldehyde is stable at an acid pH and is “activated” before use by increasing the pH to greater than 7 because the efficacy depends on the pH. To avoid decomposition, do not make the pH greater than 9. Glutaraldehyde is sporicidal, and organic matter has little effect on its disinfectant properties.

Surfactants—Surfactants contain a molecule with a hydrophobic and a hydrophilic region. The hydrophilic or polar region has an affinity for water. The hydrophobic or hydrocarbon region is water repellent.

- 1. Cationic surfactants:** These include the quaternary ammonium compounds (QAC). QAC are effective against gram-positive and gram-negative bacteria, limited in their effectiveness against enveloped viruses, and ineffective against the nonenveloped viruses. These compounds are not mycobactericidal and not sporicidal, and even some bacteria such as *Pseudomonas aeruginosa* are not susceptible to their action. The QAC are more effective when the pH of the solution is greater than 7. The QAC are adversely affected by organic matter, and their usefulness in the farm situation is limited.
- 2. Anionic surfactants:** These are strong detergents but weak disinfectants. Examples include alkali-metal and metallic soaps as well as products such as sodium laurel sulfate, which is found in many shampoos.

3. **Nonionic surfactants:** These have little disinfectant activity, and they reduce the effectiveness of other antimicrobial agents.
4. **Amphoteric surfactants:** These have bactericidal activity over a wide pH range. They combine the detergent qualities of the anionic surfactants with the bactericidal properties of the cationic surfactants. Amphoteric surfactants have been used as disinfectants in the food industry for many years.

Alcohols—Alcohols have the general formula (ROH) in which R is an alkyl or substituted alkyl group. The hydroxyl group (-OH) is the functional group and determines the properties of this family. Ethyl alcohol ($\text{CH}_3\text{CH}_2\text{OH}$) is undoubtedly one of the earliest produced and most widely used alcohols. It is sold as rubbing alcohol and used on the skin as a disinfectant. Some water must be present for alcohol to act as a disinfectant, and most rubbing alcohol is sold as 70 percent alcohol and 30 percent water. Alcohol is not sporicidal by itself, but it potentiates the sporicidal effect of hypochlorites.

Heavy Metals—Heavy metals are little used as veterinary disinfectants. Organic mercury is active against bacteria and mold, although not sporicidal. Silver nitrate has been used on burns. Zinc salts are a mild antiseptic. Copper salts are used as preservatives and as a topical treatment of foot rot in sheep.

Dyes—Dyes such as trypan red and the flavines were among the earliest attempts at finding drugs that would combat micro-organisms. Acridine dyes such as proflavine and aminacrine are used as topical antiseptics, although they are slow in their action and not sporicidal. Triphenylmethane dyes such as crystal violet, brilliant green, and malachite green are also used as topical antiseptics. Quinones are natural dyes, and some, such as chloranil and dichlone, are powerful agricultural fungicides.

Gaseous Disinfectants—

1. **Ethylene oxide:** This disinfectant is a flammable, water-soluble gas that penetrates paper and cellophane easily. Ethylene oxide is not corrosive and can be used on delicate instruments and electronic equipment.
2. **Propylene oxide:** Similar in many ways to ethylene oxide, propylene oxide is less active and penetrates poorly. Thus it cannot be used as effectively when items to be sterilized have been packaged.
3. **β -Propiolactone:** This disinfectant has been used as an inactivating agent in the production of virus vaccines. There is some suggestion that it may be carcinogenic to living animals.
4. **Methyl bromide:** This gas has been used as a fumigant on soil, grain, and large structures. It is highly toxic and dangerous to use.
5. **Ozone:** Ozone has been used as a disinfectant to purify water at the rate of 0.2 to 1 mg/L for 3 minutes.

Disease Surveillance

In all the following surveillance activities, veterinary practitioners play a key role. Veterinarians in the field are often the first line of defense against the incursion of a disease. Because the veterinary practitioner is often the first contact person with the owners of livestock or pets, it is imperative that he or she do all that is possible to educate owners, to be aware of unusual clinical signs, to be aware of current disease outbreaks or threats, and to report possible diseases of concern to State or Federal animal health officials.

The classic action plan for disease control and eradication is as follows:

1. Find—surveillance;
2. Contain—prevention of spread from infected herds; and
3. Eradicate—elimination of the disease.

In a disease eradication program, it is critically important to recognize that an effective surveillance system is a critical first step that must be in place to be successful. It is imperative to (1) be able to find the disease in order to eliminate it, and (2) find the disease before it has had a chance to spread. If the disease can be identified and eliminated before it has had a chance to spread, eradication can be achieved.

The mission of APHIS–VS is to protect and improve the health, quality, and marketability of our Nation's animals, animal products, and veterinary biologics by preventing, controlling, or eliminating animal diseases and monitoring and promoting animal health and productivity. To accomplish this, it is critical to be able to detect foreign animal diseases and emerging domestic diseases, monitor disease trends and threats in the United States and other countries, detect risk, evaluate disease control and eradication programs, and provide adequate animal health information. Animal health surveillance plays a key role in accomplishing these goals.

The National Animal Health Surveillance System (NAHSS) is a comprehensive, integrated, coordinated system created to detect events and trends related to animal health for all stakeholders involved in public, animal, and environmental health. The system provides a dynamic knowledge base for actions designed to reduce morbidity, mortality, and economic losses while improving animal health, productivity, marketability, and product safety. Such a system is the foundation for animal health, public health, food safety, and environmental health.

In addition to the obvious role surveillance plays in monitoring endemic diseases and providing actionable information for disease eradication programs (e.g., for

brucellosis, tuberculosis, and others), there are a several other significant justifications for animal health surveillance. These include the rapid detection of emerging animal and public health issues and accidentally or intentionally introduced foreign animal disease agents. Animal health surveillance also provides support for the marketability of animals and animal products by demonstrating quality and safety attributes of products through quality assurance and certification programs and by providing scientifically sound evidence of regional prevalence for trade-significant diseases.

Historically, animal health surveillance systems in the United States have been designed primarily for specific disease control or eradication programs. Now, however, working in collaboration with State and industry partners, APHIS is moving toward an organizational and informational infrastructure that supports baseline animal health monitoring and “grows” a dynamic knowledge base for actions designed to reduce morbidity, mortality, and economic losses while improving animal health, productivity, marketability, and product safety.

APHIS–VS is focusing on several key areas during the enhancement of current national animal health surveillance efforts:

- Enhancement of surveillance for current program diseases,
- Rapid detection of emerging and foreign animal diseases,
- Surveillance for diseases affecting marketability or economics of industry,
- Surveillance based on risk of disease,
- Monitoring of animal health trends, and
- Ability to do focused surveillance as needed.

In closing, we cannot overemphasize the key role veterinary practitioners play in national disease surveillance efforts. The veterinarian in the field is the critical first line of defense against disease incursion.

Laboratory Submissions

Part of your responsibility as an accredited veterinarian is to ensure that specimen samples sent to laboratories for testing and certification are properly prepared, packed, and sent. Most testing for regulatory work involves drawing and submitting blood samples, but you may also be required to submit other fluid or tissue specimens. When submitting blood or serum samples, it is important to take precautions to provide adequate sample volume for testing and to prevent hemolysis, spoilage, or breaking of the sample tubes.

Diagnostic sample submission procedures are complex and consist of multiple regulatory requirements enforced by multiple entities. Due to the complexity and length of these submission procedures, this guide will explain only what agencies are involved in this process and then direct you to one of two sources of information in the event that you have samples that need to be submitted to the laboratory.

The following are entities involved in the regulation of diagnostic sample submissions:

1. U.S. Department of Transportation (DOT)

DOT has regulatory authority over shipments of hazardous materials. Diagnostic specimens fall under this category. DOT regulations were revised in 2003 to harmonize U.S. requirements with international requirements and to enhance the safe transportation of diagnostic specimens. For further information, consult the DOT Web site at <http://www.dot.gov>.

2. U.S. Postal Service (USPS)

The USPS regulates hazardous material shipments of “diagnostic specimens” sent through the mail. Their regulations are consistent with those of DOT and IATA for shipments of diagnostic specimens. For further information, consult the USPS Web site at <http://www.usps.com>.

3. International Air Transport Association (IATA)

IATA is the trade association of the world’s airlines. Its regulations are tailored to United Nations technical instructions. IATA regulations must be followed for all shipments of diagnostic specimens by air whether sent within the United States or internationally. IATA regulations are consistent with DOT and USPS requirements for shipments of diagnostic specimens. For further information, consult the IATA Web site at <http://www.iata.org>.

If you need to submit diagnostic specimens in your role as an accredited veterinarian, we request that you follow the guidance below on how and where to get instructions on the sampling, packaging, and shipping of these specimens.

- During normal working hours, contact your local State APHIS–VS Area Office or State animal health official to determine how the sample should be collected and packaged and where the sample should be shipped. Contact information for all APHIS–VS Area Offices is in appendix B of this guide. But to check for the most up-to-date listings, visit this Web site:
<<http://www.aphis.usda.gov/vs/nvap/vsoffice.html>>.
- After normal working hours, please contact NVSL at (515) 663–7200. This phone number connects you with the night security at NVSL. Ask to speak with the manager on duty to determine how the sample should be collected and packaged and where it should be shipped. Remember, even when submitting samples directly to a laboratory after hours, always provide the APHIS–VS Area Office with a copy of the submission information.

Laboratory submission forms (VS 10–4 and VS 10–4a) are available electronically at
<<http://www.aphis.usda.gov/vs/nvsl/Forms/Forms.htm>>.

Animal Movement

Interstate Regulations

Interstate regulations provide for quarantine, restriction of movement, maintenance of sanitation, and identification of animals to prevent the spread of animal disease. Accredited veterinarians certify livestock, birds, and poultry for intrastate and interstate transportation according to the regulations in 9 CFR. Individual States have certificates of veterinary inspection that are available from the office of the State animal health official.

Interstate transportation of animals (including poultry) and animal products must conform to the requirements in 9 CFR, chapter 1, subchapter C, parts 70 through 89 and 121 and 122. Each State may have additional animal-entry requirements. These requirements, as well as intrastate transportation regulations, can be obtained from the appropriate State animal health official.

APHIS–VS provides a 24-hour telephone voice-response service to access the State Regulations Retrieval System. This service is available by dialing 1–800–545–8732 from a touchtone telephone. The Regulations Retrieval System is also available online at <http://www.aphis.usda.gov/vs/sregs>.

Interstate and intrastate transfer of livestock pathogens and toxins of regulatory concern is regulated under 9 CFR parts 121 and 122 and requires a Federal permit for movement.

To facilitate the movement of livestock and poultry and to prevent the spread of disease, you are responsible for becoming familiar with the appropriate State and Federal regulations. You should thoroughly examine animals or poultry according to these regulations or instructions given by your State animal health official or APHIS–VS Area Office and provide a complete and legible certificate of veterinary inspection.

The following sections summarize pertinent areas of 9 CFR and State requirements. Because the regulations are subject to change, this information should be verified. (See appendix B for contacts in the State of destination.) An entry permit may also be required from the State of destination.

Diseased Animals and Poultry

Interstate movement of diseased animals and poultry is generally prohibited. Animals or poultry affected with any of the following diseases endemic to the United States shall not be moved to another State except as provided for in the CFR: equine

babesiosis (piroplasmosis), bovine piroplasmosis or splenetic fever, scabies in cattle, acute swine erysipelas, tuberculosis, Johne's disease, brucellosis, scrapie, bluetongue, anthrax, psittacosis or ornithosis, poultry disease caused by *Salmonella enterica* serotype *enteritidis*, and Newcastle disease, or any other communicable disease that is endemic to the United States. Also, animals that are infested with the *Boophilus* tick are not to move interstate.

Animals or poultry affected with any of the following diseases not known to exist in the United States shall not be moved interstate: foot-and-mouth disease, hog cholera (classical swine fever), rinderpest, contagious bovine pleuropneumonia, European fowl pest, dourine, vesicular exanthema, screwworm, glanders, scabies in sheep, or any other communicable disease exotic to the United States.

Cattle—For interstate movements, all cattle 2 years of age or over, except steers and spayed heifers, must be individually identified (see the section entitled “Current Animal Identification”) and accompanied by a shipper's statement or other document. Exceptions apply to certain movements, such as when there is no change of ownership or movements to certain stockyards or slaughterhouses.

Swine—No swine may be sold, transported, received for transportation, or offered for sale or transportation in interstate commerce unless they are individually identified as required in 9 CFR 71.19. (See also the section of this guide entitled “Swine Identification.”) Record the following information on a document:

- All numbers applied to the swine;
- Any other numbers and approved identification marks appearing on the swine that are needed to identify the swine to its previous owner and location;
- The address of the premises where the approved means of identification were applied;
- The telephone number of the person who owns or possesses the swine.

Sheep and Goats—

Issuance of Certificates of Veterinary Inspection (CVIs) for Sheep and Goats—CVIs are required, as specified by 9 CFR 79.3, for certain interstate movements of animals. CVIs may be required for other classes of animals by some States. For sheep and goats, CVIs are required for:

- Breeding sheep and goats (any sexually intact animal that is not moving directly to slaughter, through slaughter channels to slaughter, or to a feedlot to enhance its condition for movement to slaughter) except
 - Sheep and goats being moved for grazing without change of ownership;
 - Low-risk commercial sheep that require an owner and veterinary statement instead of a CVI; and

–Low-risk commercial breeding goats (*Note: an owner and veterinary statement is not required, unlike the practice for low-risk commercial sheep*); and

- Sexually intact sheep or goats for exhibition.

Please note that scrapie-positive, suspect, and high-risk animals, some exposed animals, and animals that originated in an infected or source flock require permits rather than CVIs. Contact the APHIS, VS Area Office for further information on these permits.

A certificate must show

1. Individual animal identification, including the official eartag number; registered breed association registration tattoo, or brand. For additional information, please refer to the section on “Identification Requirements” in the Scrapie Eradication—Uniform Methods and Rules at <http://www.aphis.usda.gov/vs/nahps/scrapie/umr-scrapie-erad.pdf>.
2. Registered breed association registration number and any other official individual identification of each animal to be moved. Except in the case of animals identified with premises identification that is assigned to the flock of origin and that meets the requirements for individual animal identification, the premises number may be recorded instead of the individual identification number. (Copies of the registration papers can be attached to the CVI in lieu of recording all registration information on the certificate. Other attachments may also be used to list the identification of the animals as permitted in 9 CFR 79.5(b), in lieu of recording them directly on the certificate.)
3. Number of animals covered by the certificate.
4. Purpose for which the animals are to be moved.
5. Points of origin and destination.
6. The consignor and the consignee.
7. A statement by the issuing accredited or State or Federal veterinarian that the animals were not exhibiting clinical signs associated with scrapie at the time of examination. (State CVIs that have certification statements indicating that “the animals have no history of clinical signs or exposure to contagious or infectious diseases,” or words to that effect, will suffice in lieu of the specific scrapie statement).
8. An owner statement indicating whether the animal is or is not a scrapie-positive, suspect, high-risk, or exposed animal and whether it originated in an infected, source, exposed, or noncompliant flock. Market veterinarians may make this statement on behalf of the owner if
 - The market has notified sellers in writing that any animal for which this statement cannot be made must be made known to the market operator before the animal is unloaded at the market;

- The market has sellers sign such a statement as part of the intake process, and the animal is tracked through the sale such that an accurate statement can be made;
- For the purposes of making this statement, animals that have been redesignated low-risk exposed animals, genetically resistant exposed sheep, or unrestricted genetically less-susceptible exposed sheep are not considered exposed animals; or
- For the purposes of making this statement, only sexually intact female animals that are genetically susceptible or of unknown genotype and that originated from a flock with an exposed status are considered animals from an exposed flock and only until the flock's exposed status has been released.

Certification of Veterinary Inspection

When a CVI is required, it must accompany each shipment and list the following information:

- Consignor and location from which the animals have been moved;
- Name and address of the owner at the time of movement;
- Consignee and destination of the animals;
- Number of animals covered by the certificate;
- Purpose for which the animals are to be moved;
- Individual official identification of each test-eligible animal;
- Dates and results of the official tests;
- Age;
- Official calfhood vaccination (OCV) status of each animal (OCV tattoo); and
- If required, a permit number issued by the State of destination.

Note: The most common veterinary accreditation violations include the improper completion and/or issuance of Certificates of Veterinary Inspection (health certificates) for the interstate movement of animals. Compliance action resulting from improper certificate completion can affect a practitioner's accreditation status.

Other Documents

As an alternative to writing individual animal identifications on a CVI, you may use another document to provide this information but only under the provisions specified in 9 CFR part 78.1. Test dates and results must be recorded on the CVI. All of the following requirements must be met:

- The document must be a State form or an APHIS–VS form that requires individual identification of animals.

- A legible copy of the document must be stapled to the original and each copy of the CVI.
- Each copy of the document must identify each animal to be moved with the inspection certificate, but any information pertaining to other animals and any unused space on the document for recording animal identification must be crossed out in ink.

The following information must be written in ink in the identification column on the original and each copy of the CVI and must be circled or boxed, also in ink, so that no information can be added: (1) the name of the document and (2) either the serial number on the document or, if the document is not imprinted with a serial number, both the name of the person who prepared the document and the date that the document was signed.

Specific Diseases in the CFR

Parts 1–199 of Title 9 (Animals and Animal Products) of the Code of Federal Regulations contain specific regulatory requirements pertaining to brucellosis, tuberculosis, pseudorabies, exotic Newcastle disease, Johne’s disease, scrapie, the Horse Protection Act, the National Poultry Improvement Program (NPIP), swine health protection, and veterinary accreditation. Title 9 CFR may be found online and viewed in its entirety at http://www.access.gpo.gov/nara/cfr/waisidx_04/9cfrv1_04.html.

Issuing Export Certificates

International certificates of veterinary inspection for the export of animals from the United States are completed by the accredited veterinarian, who certifies herd and animal inspection status, conducts tests, and records test results for the individual animals being exported. To be valid, completed and signed certificates of veterinary inspection for the export of animals from the United States must be reviewed and endorsed by the APHIS–VS Area Office in the State where they were issued.

The United States has minimal requirements for animals to be exported to other countries. Your APHIS–VS Area Office can provide you with the current regulations, tests, and inspections required. Approved ports of embarkation and shipping requirements can be found in 9 CFR part 91. Each country may have other specific health requirements for entry of animals. These requirements are established by the importing country, not the United States. Other countries may also have their own certificate format for export. Because export requirements change frequently, obtain the current export requirements by visiting the National Center for Import and Export, Animal Regulations Library at http://www.aphis.usda.gov/vs/import_export.htm. If you have additional questions not answered by the Regulations Library, contact your APHIS–VS Area Office for assistance. Export certificates are official documents, and they should be typewritten, accurate, and complete.

Livestock

Certification statements, test results, vaccinations, animal identification, and other information appearing on VS Form 17–140, U.S. Origin Health Certificate CVI are the responsibility of the issuing accredited veterinarian. When an AVIC endorses a health or inspection certificate, he or she is

- Certifying that the animals meet the importing country's requirements;
- Verifying that the inspection, testing, and certification were made by a licensed and accredited veterinarian; and
- Certifying that the test results are negative and all certification statements are true and factual as far as can be determined.

Original or carbon copies (no photocopies or facsimile copies) of all laboratory test results must be included with the CVI (animal health certificate) when it is presented to USDA for endorsement. After a certificate is endorsed, it is returned to the practitioner or exporter.

Horses

The international shipment of horses is sometimes delayed because all requested information is not included or because the animals are not identified completely on VS Form 17–140, U.S. Origin Health Certificate CVI or on forms designated by the country of destination submitted for approval by the accredited veterinarian. Many countries are now requiring their own form for equine importation, and APHIS is complying with them; always check with your APHIS–VS Area Office to be certain of the form required.

The U.S. Origin Health Certificate (CVI) for the Export of Horses From the United States to Canada is used for all horses going to Canada except horses for immediate slaughter. Horses for immediate slaughter are recorded on VS Form 17–140). This certificate can be obtained from the APHIS–VS Area Office. For the completed CVI to be valid, it must be reviewed and endorsed by the AVIC.

The certificate should be typed. It is valid for 30 days from the date of issue by the accredited veterinarian. The date of issue refers to the date the horse was examined and not necessarily the date the certificate was signed. The horse's description on the export certificate must match the description on VS Form 10–11, Equine Infectious Anemia Laboratory Test or official State EIA Laboratory Test form. Four copies of the CVI and either the original or a carbon copy of VS Form 10–11 (or official State EIA Laboratory Test form) are submitted for review and endorsement. Photocopies and facsimile copies of VS Form 10–11 (or official State EIA Laboratory Test form) are not acceptable. VS Form 10–11 is not required for horses exported for immediate slaughter.

See appendix D for examples of VS Forms 17–140 and 10–11 and for instructions on completing them. For additional information on horse identification, see the section entitled "Current Animal Identification."

Poultry

VS Form 17–6, Certificate for Poultry or Hatching Eggs for Export, is used for the international movement of poultry or hatching eggs (see appendix D for an example of this form). You can obtain VS Form 17–6 from your nearest APHIS–VS Area Office. The NPIP Approval Number and NPIP Classification (blocks 9 and 10 on VS Form 17–6) can be obtained from your APHIS–VS Area Office. This information is also published annually in two books: the NPIP Directory of Participants Handling Egg-Type and Meat-Type Chickens and Turkeys and the NPIP Directory of Participants Handling Waterfowl, Exhibitory Poultry, Game Birds, and Ratites.

Export Certificates

The most commonly used export certificates are listed below. For examples of each form, please refer to appendix D. You can get additional information regarding export certificates by visiting the National Center for Import and Export, Animal Regulations Library at http://www.aphis.usda.gov/vs/import_export.htm or by contacting the APHIS–VS Area Office.

- VS Form 17–140, U.S. Origin Health Certificate (CVI). Use VS Form 17–140 for livestock, embryos, semen, and horses for immediate slaughter.
- VS Form 17–6, Certificate for Poultry or Hatching Eggs for Export.
- APHIS Form 7001, U.S. Interstate and International Certificate of Health Examination for Small Animals.
- U.S. Origin Health Certificate (CVI) for the Export of Horses From the United States to Canada. Use this certificate for all horses transported to Canada except horses for immediate slaughter.
- Because some countries require individualized certificates for entry of certain species, individualized export certificates have been developed for these special requirements. These are often used in place of VS Form 17–140. Please check with the nearest APHIS–VS Area Office before every export shipment to confirm that you have the most recent protocol and form for the shipment.

Dogs and Cats

USDA does not regulate the exportation of privately owned dogs and cats. Many foreign countries regulate the entrance of dogs and cats from the United States and may require USDA endorsement of small-animal CVIs. A few countries require an additional endorsement by the U.S. Department of State. The APHIS–VS Area Office in your State can provide additional information on this protocol.

The best and most definitive source of information in the United States regarding import regulations for pet animals is the U.S. embassy for the respective foreign country <<http://www.embassy.org/embassies>>.

Any legible CVI that includes the name, species, breed, sex, age, and description of the animal; date of examination; vaccination(s) received and date of administration; city and country of destination; and the examining veterinarian's signature can be used unless the country of destination requires a specific certificate. APHIS Form 7001, U.S. Interstate and International Certificate of Health Examination for Small Animals, can be used for this purpose. You can get it from your APHIS–VS Area Office.

Laboratory Tests

All tests for export must be conducted in USDA-approved laboratories (State or private diagnostic laboratories). Official retests must be conducted in the same laboratory where the initial test was performed. Contact your APHIS–VS Area Office for a list of approved laboratories. NVSL in Ames, IA, will conduct export-qualifying tests for dourine, glanders, and piroplasmosis and other tests that are not available from other laboratories. All submissions to NVSL must be accompanied by a VS Form 10–4, Laboratory Submission Form. When preparing to submit samples to NVSL, you should contact the local APHIS–VS Area Office because they may need to have the permission of the AVIC to submit samples to NVSL. See the section entitled “Laboratory Submissions.”

Certification Statements

If more than one veterinarian is involved in the preparation of the animal(s) for export, each accredited veterinarian who provided certification statements and performed tests or vaccinations, as well as the location where such inspections, tests, or vaccinations were performed, must be identified on the CVI. If test results, vaccinations, or certification statements are provided by a nonaccredited veterinarian, they are not acceptable. If you have any questions about certifying work that was done by another veterinarian, call your APHIS–VS Area Office for instructions. The following format can be used by the issuing veterinarian:

I certify that the certification statements, tests, and/or vaccinations included in this certificate of veterinary inspection were either performed and issued by me or I have the documents on file from the accredited veterinarians listed below:

Veterinarian’s Name and Location (City, State)

When the animals offered for export are assembled from many premises for testing, the herd and premises of origin are often difficult to ascertain. When herd certification statements are required by the importing country for periods greater than the time spent at the assembly points, the exporter and accredited veterinarian will be required to obtain proper certification statements on the herd health status for both the assembly premises and the premises where the animals have been located for at least the 120 days before assembly for export. For example, if the animals were on two premises during the 120 days before assembly, the certification statements would need to be prepared for each premises, including the assembly premises. A sample certification format that could be used by the accredited veterinarian and owner is shown in figure 1. All certification statements should be typed exactly as they appear in the requirements received from the APHIS–VS Area Office.

DECLARATION BY OWNER/AGENT OF THE ANIMALS
TO BE EXPORTED TO _____ [country]

I, _____ [block letters], the owner/agent of the _____ [number] of animals whose official metal tag identification numbers are listed below, hereby declare:

Eartag _____ Eartag _____

[List the eartags of all animals covered by the certification statements.]

1. The animals have resided at _____, the premise of origin since _____ [date], or since birth, and no clinical evidence of contagious or infectious diseases has occurred on the premise during this time.

2. During the 6 months preceding export, the animals to be exported have not been subjected to any official quarantine for infectious or contagious diseases.

Figure 1—Sample certification form.

Time Constraints

Sufficient time must be allowed to arrange isolations, conduct treatments, obtain test results, and meet other requirements for certification. Be sure that your client knows and understands these time constraints.

Common Problems

The following are examples of typical mistakes that could affect an international movement of animals. Animals may be held at ports, confiscated, or destroyed because the certification needed is inaccurate or incomplete. At the very least, errors can result in unnecessary delays for your clients or patients. Please review these examples. If you have any questions, contact your nearest APHIS–VS Area Office for guidance.

- Failure to use the proper CVI. Check with the APHIS–VS Area Office or State animal health official if you have any questions.
- Test results or vaccination certificates (such as a rabies certificate) were not included.
- Accreditation status of issuing veterinarian is questionable. Accreditation is not automatic—you must have received written authorization stating that you are accredited.
- Owner or accredited veterinarian did not record complete name and address of place of origin and destination (importing country).
- Missing certification statements.
- Owner or accredited veterinarian did not enclose appropriate user fee with CVI (additional information on user fees can be found at <http://www.aphis.usda.gov/mrpbbs/ufees/ufees.html>).
- Signature of issuing veterinarian is missing or illegible.
- Failure to be timely (CVI or test results are old).
- Improper identification of animal.
- Improper test performed (such as the AGID test for EIA or the ELISA test for bluetongue).
- Illegible writing.

Animal Identification

Current Animal Identification

To control and eradicate animal diseases, epidemiologists must be able to trace the movement of animals. This goal can be realized only if the animals are properly identified and the individual and the herd, flock, or group identification are recorded.

As an accredited veterinarian, you are legally responsible for properly identifying animals and recording the identification on certain official documents, such as CVIs, test charts, and vaccination charts. It is essential that another individual be able to positively identify animals that you have listed on official documents. When documents require animal identification, record all forms of identification associated with the animal.

Acceptable means of identifying different species of animals are defined below. USDA-approved backtags cannot be used as the only identification for onfarm testing or for movement other than in slaughter channels.

For the purposes of identifying animals, a Premises Identification Number is a unique number assigned by a Federal or State animal health official to a livestock production unit that is, in the judgment of the State animal health official or AVIC, epidemiologically distinct from other livestock production units.

Cattle Identification

Record all forms of identification if more than one form is present. (See figure 2 for an example of a calfhood vaccination identification, figure 3 for a depiction of cattle dentition to assess age, and table 3 for a list of bovine breeds and abbreviation codes.) In addition to listing the correct age, gender, and breed of the animal, use one or more of the following identification methods:

- Official eartag. An official eartag is an identification eartag approved by APHIS as being tamper resistant and providing unique identification for each animal. An official eartag may conform to the alphanumeric National Uniform Eartagging System, or it may bear a valid Premises Identification Number used in conjunction with the producer's livestock production numbering system to provide a unique identification number. The first two numbers on a tag are the numbers assigned to a specific State. For example, South Carolina's number is 56. (See tables 4 and 5 for other State numbers.)
- Individual animal's registration tattoo accompanied by the official registration certificate issued by a recognized breed association.

- Official registration brand accompanied by official brand inspection certificates issued by a recognized brand inspection agency.
- Registration number of a breed association recognized by APHIS–VS in conjunction with an official eartag, tattoo, or brand.
- USDA-approved backtag. Backtags are used mostly in stockyards or slaughterhouses. These cannot be used as the only identification for onfarm testing or for movement other than in slaughter channels.

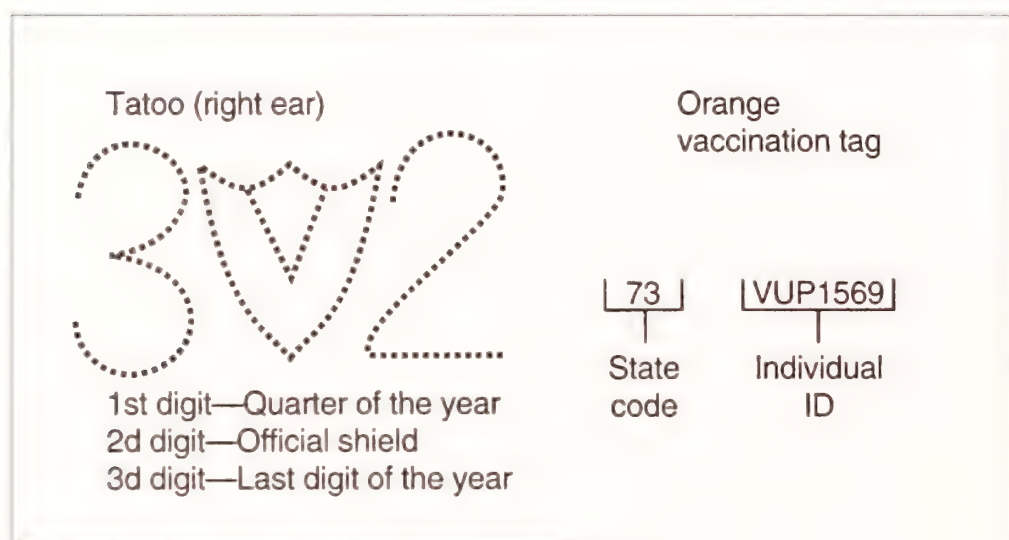
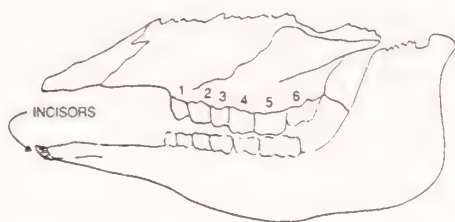


Figure 2—*Brucellosis calfhood vaccination identification.*



Upper and lower arcs showing
premolars and molars.

1—1st premolar; 2—2nd premolar;
3—3rd premolar; 4—1st molar;
5—2nd molar; and 6—3rd molar.



20.5 months



21 months



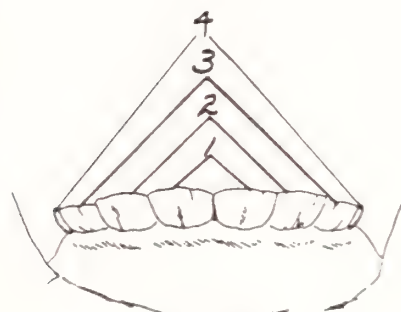
22 months



23.5 months



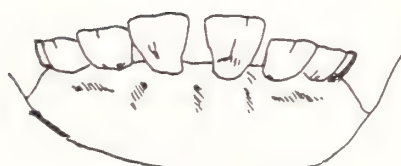
25 months



18 months



19 months



20 months

Figure 3—Cattle dental formula. (Adapted from *Bovine Practitioner*, No. 9-74, and "Incisor Tooth Eruption, Development and Attrition," Texas A&M University.)

Table 3—Cattle breeds and abbreviation codes

Code	Cattle Breed	Code	Cattle Breed	Code	Cattle Breed
AN	Aberdeen Angus	FP	East Flemish Red Pied	NM	Normande
AB	Abondance	ER	Eringer	NR	Norwegian Red
AF	Africander	FA	Flamand	PA	Parthenais
AY	Ayshire	FL	Fleckvieh	PI	Piedmontese
BA	Barzona	FR	Fribourg	PR	Pie Rouge
BE	Beefalo	FB	Friesian (Belgian)	PZ	Pinzgauer
BF	Beef Friesian	DF	Friesian (Dutch)	RN	Romagnola
BM	Beefmaster	GA	Galloway (beef)	RA	Ranger
FF	Belgian Blue	GD	Galloway (dairy)	AR	Red Angus
BG	Belted Galloway	GS	Gascone	RB	Red Brangus
BW	Black Whiteface	GV	Gelbvieh	RD	Red Dane
BD	Blonde d'Aquitaine	GR	Groningen		(Red Danish, Danish Red)
BO	Bradford	GU	Guernsey	WW	Red Holstein
BR	Brahman	HC	Hays Converter	RP	Red Poll
BH	Brahmental	HH	Hereford (horned)	RO	Rotbunte
BN	Brangus	HP	Hereford (polled)	AS	Salers
BU	Braunvieh	SH	Highland (Scotch Highland)	SG	Santa Gertrudis
SB	Brown Swiss (beef)	HO	Holstein	MS	Shorthorn (milking)
BS	Brown Swine (dairy)	HY	Hybrid (Alberta Hybrid)	SS	Shorthorn (Scotch beef)
CN	Canadienne	JE	Jersey	SP	Shorthorn (polled)
CP	Campine Red Pied	KB	Kobe (Wagyu)	IS	Shorthorn (Illawara)
CB	Charbray	LM	Limousin	SM	Simmental
CH	Charolais	LR	Lincoln Red	DS	South Devon
CA	Chianina	LL	Luing	DX	Sussex
XX ¹	Crossbred	MA	Maine-Anjou	TA	Tarentaise
DB	Danish Black and White	MR	Marchigiana	TG	Tasmanian Grey
DJ	Danish Jerry	ME	Maremmiana	TL	Texas Longhorn
RW	Danish Red and White	MI	Meuse-Rhine-Yssel	WB	Welsh Black
DE	Devon	MO	Montbeliard	WF	West Flemish Red
DR	Dexter	MG	Murray Grey		

¹ If an animal is crossbred, record the predominant breed with an “X” beside it (e.g., ANX). Use only “XX” when no single breed is predominant.

Table 4—State codes, arranged numerically

Code	State	Code	State	Code	State
11	Maine	45	North Dakota	72	Louisiana
12	New Hampshire	46	South Dakota	73	Oklahoma
13	Vermont	47	Nebraska	74	Texas
14	Massachusetts	48	Kansas	81	Montana
15	Rhode Island	50	Delaware	82	Idaho
16	Connecticut	51	Maryland	83	Wyoming
21	New York	52	Virginia	84	Colorado
22	New Jersey	54	West Virginia	85	New Mexico
23	Pennsylvania	55	North Carolina	86	Arizona
31	Ohio	56	South Carolina	87	Utah
32	Indiana	57	Georgia	88	Nevada
33	Illinois	58	Florida	91	Washington
34	Michigan	61	Kentucky	92	Oregon
35	Wisconsin	63	Tennessee	93	California
41	Minnesota	64	Alabama	94	Puerto Rico
42	Iowa	65	Mississippi	95	Hawaii
43	Missouri	71	Arkansas	96	Alaska

Table 5—State codes, arranged alphabetically

State	Code	State	Code	State	Code
Alabama	64	Louisiana	72	Ohio	31
Alaska	96	Maine	11	Oklahoma	73
Arizona	86	Maryland	51	Oregon	92
Arkansas	71	Massachusetts	14	Pennsylvania	23
California	93	Michigan	34	Rhode Island	15
Colorado	84	Minnesota	41	South Carolina	56
Connecticut	16	Mississippi	65	South Dakota	46
Delaware	50	Missouri	43	Tennessee	63
Florida	58	Montana	81	Texas	74
Georgia	57	Nebraska	47	Utah	87
Hawaii	95	Nevada	88	Vermont	13
Idaho	82	New Hampshire	12	Virginia	52
Illinois	33	New Jersey	22	Washington	91
Indiana	32	New Mexico	85	West Virginia	54
Iowa	42	New York	21	Wisconsin	35
Kansas	48	North Carolina	55	Wyoming	83
Kentucky	61	North Dakota	45	Puerto Rico	94

Swine Identification

The following are APHIS-approved means of swine identification (see table 6 for swine breed codes):

- Official eartags when used on any swine.
- USDA backtags when used on swine moving to slaughter.
- Official swine tattoos when used on swine moving to slaughter if the use of the official swine tattoo has been requested by a user or the State animal health official and APHIS authorizes its use in writing based on a determination that the tattoo will be retained and visible on the carcass of the swine after slaughter so as to provide identification of the swine.
- Tattoos of at least four characters when used on swine moving to slaughter except sows and boars.
- Ear notching when used on any swine if the ear notching has been recorded in the book of record of a purebred registry association.
- Tattoos on the ear or inner flank of any swine if the tattoos have been recorded in the book of record of a swine registry association.
- For slaughter swine and feeder swine, an eartag or tattoo bearing the Premises Identification Number assigned by the State animal health official to the premises on which the swine originated.

Table 6—Swine breed codes

Code	Swine Breed	Code	Swine Breed	Code	Swine Breed
BK	Berkshire	LC	Lacombe	SO	Spotted
CW	Chester White	LA	Landrace	TM	Tamworth
XX	Crossbred	LB	Large Black	WE	Welsh
DU	Duroc (Jersey)	LW	Large White	WS	Wessex Saddleback
FE	Feral Swine	PE	Pietrain	YO	Yorkshire
HA	Hampshire	PC	Poland China		
HE	Hereford	RW	Red Wattle		

Equine Identification

With the current high level of interest within the horse industry regarding equine census estimates and potential disease movement, new methods for equine identification are rapidly being researched and developed. Many breed registries are either contemplating change or are in the process of changing the methods by which they identify horses. For that reason, specific breed requirements for identification are not listed here. Instead, this manual describes equine identification technologies currently available, in production in the United States, or in the late stages of development. You should consider multiple technologies when you are

either establishing or determining the unique identification of a horse. When shipping a horse interstate, APHIS recommends that the accredited veterinarian contact the the State animal health officials of the State of destination to verify the specific identification requirements of the receiving State. When shipping a horse internationally, the accredited veterinarian should contact the APHIS–VS Area Office to determine the identification requirements of the receiving country.

Hot Iron or Fire Brand—

Background: Introduced by Spanish settlers (early 1800s).

Technology: Heated brand (by fire or electricity) applied to dermis at variable sites.

Usage: Individualized ranch or farm brands.

Lip Tattoo—

Background: Introduced by U.S. Army (late 1800s).

Technology: Ink and perforating plates applied to upper lip (buccal) mucosa.

Usage: Racing thoroughbreds (all thoroughbreds registered by genetic typing).

Freeze Mark or Cold Brand—

Background: New popularity for humanitarian reasons (recent decades).

Technology: Cryogenically cooled brand applied to dermis of the neck.

Usage: All Standardbreds (right neck) and Bureau of Land Management (BLM) wild horses/burros (left neck); Arabians have discontinued; many nonregistered “backyard” and farm horses to deter theft.

Electronic Identification (RFID)—

Background: Currently the most popular and computer compatible (this decade).

Technology: Implantable transponder activated when interrogated by radio frequency readers; thus, such units are known as Radio Frequency Implantable Devices (RFIDs). RFID readers are used to identify and display transponders, alphanumeric characters. Microchips are implanted in the left nuchal ligament (the USDA- and FDA-approved anatomical implant site for all equids in the United States). The International Standards Organization (ISO) now brings all major electronic identification and RFID manufacturers to unified standards. Universal readers are available.

Usage: Many foreign breed registries in North America, all horses tested for EIA in the State of Louisiana, and many nonregistered equids.

Integrated Circuitry (IC) Cards (“Smart Cards”)—

Background: Future technology incorporated currently in several pilot studies.

Technology: Electronic tool links any desired information to the equid’s unique

identification and stores these data on an IC chip built into a device resembling credit card. The card, retained by the owner or other custodian, can be accessed only by persons using a second authorization card. These cards may be used in local management of the horse or herd by the owner, custodian, trainer, veterinarian, or other authorized person or may be connected via the Internet to regulatory agencies, breed associations, show offices, or other professional affiliates.

Usage: None currently in equids.

Iris Biometrics—

Background: Future technology based on 1994 patented technique in people.

Technology: Iris “code” by “demodulation” of iris pattern (geometric structure) is done through complex mathematics. Benefits in equine applications are that the use of the portable digital camera for imaging is fast and noninvasive.

Usage: None currently in equids.

Retinal Biometrics—

Background: New bovine–porcine technology attempts application to equine retina.

Technology: Vascular pattern of retina is recorded uniquely by algorithm. Benefits in equine applications are that the use of the portable digital camera for imaging is fast and noninvasive; additionally, it is designed to include a global positioning satellite (GPS) receiver to allow automatic encryption of date, time, and location of image capture.

Usage: None currently in equids.

Equine Colors and Markings

Determination of equine coat colors can be a challenge even to experienced equine identifiers. The names of most colors used to describe equids are unique to the species and can be counterintuitive; even experts often disagree. Some breed registries recognize only a limited number of colors; others are by definition limited to a single group of colors (e.g., Cleveland Bay). The best approach for equine identification is to use the basic terminology common among most breeds of horses, mules, or donkeys with a notation if the technical name of the color does not match the actual color observed. For example it may be appropriate to describe an older grey horse as “grey (appears almost white)” where possible.

Markings include patterns of white on the head and legs, hair whorls (cowlicks), scars, blemishes, and patterns of other colors superimposed on a base color. As determined by the purpose, white markings may be named, drawn in a picture, described in detail, or photographed.

When all possible modifications and variations are considered, there are dozens of named colors for equids. There is no single, standardized nomenclature for describing

equine color and markings, and the inheritance of horse color is a science unto itself. A summary at this level of detail will not be attempted here. Registry rules (which can be different between breeds), historical and cultural influences, and even regional differences within the United States all contribute to the difficulty in describing a single color-naming system. The objective of this section on equine identification is to explain the prevailing basic terminology that is useful for the identification of equids for animal health or regulatory purposes.

For identification, mules are usually described using the same terms as horses or using the ordinary names of colors. The traditional terms for describing the color of donkeys (includes burros and all asses) will be briefly described here, but they are also often described using the ordinary names of colors. There are a few good references on equine colors, and the reader is encouraged to review those works for a more detailed discussion of the subject.

Colors

The base color of horses occurs independently of any white superimposed on the underlying coat color. In addition to the white markings that may appear on the head or legs, white may appear on the body. When describing a horse's color, it is important to recognize the "points" of a horse as black or not black whether or not white markings are present. The **points** are the mane, tail, lower legs, and ear rims and are as important to recognize as the base color to name a color properly. Foals are often born a different color than they will be as adults. The adult color often shows up around the eyes and on the face first. Usually foals shed out to their adult color around 2 months of age.

There are three primary base coat colors in horses: **bay**, **chestnut**, and **black**. These colors are modified by various factors (genes), including dilution factors, to produce a huge variety of shades and specific color patterns. **Brown** (which some consider synonymous with dark bay) and **sorrel** (usually considered synonymous with, or a variation of, chestnut) are also basic colors that can help to identify most horses. Common modifications of the base colors include the colors **grey/gray** and **roan** as well as the **pinto** and **Appaloosa** color patterns. Finally, there are a host of colors created by modification or dilution factors that are given distinct names. Those considered here include **buckskin**, **dun**, **palomino**, **cremello**, and **white**.

APHIS-VS gratefully acknowledges the cooperation of The Jockey Club in allowing us to reproduce common head and leg marking figures.

Basic Horse Colors—

- **Bay:** The coat color varies from yellow-tan to dark blood-red to brown and almost black. The points (mane, tail, lower legs, ear rims) are always black unless white markings are present. Some registries use dark bay/brown as one color.

- Dark bay:** The coat is brown with areas of tan on the head, shoulders, flanks, inside of the thighs, and the upper portions of the legs. The points are always black unless white markings are present. This color is also sometimes called brown.
- **Chestnut:** This color includes any shade of red from very light (blonde, sorrel) to dark red (liver chestnut). A chestnut can be so light in color as to give the appearance of a palomino or so dark that it looks brown or shows numerous black hairs throughout its coat. A chestnut always has points the same color or lighter compared with the body; the points are never black. In some breeds and much of the Western United States, sorrel is used synonymously with chestnut.
- Sorrel:** A red to reddish yellow base coat with lighter shades of similar color (may be flaxen or blonde) in the mane and tail. This color is sometimes used synonymously with chestnut.
- **Black:** The entire coat is black excluding any white markings that might be present. The mane, tail, muzzle, flanks, and legs, must be all black with no areas of brown or tan coloration.
- **Brown:** Usually synonymous with dark bay and sometimes appearing almost black but with lighter tan coloration on the muzzle, flanks, or both. The points are always black unless white markings are present.

Modifications of Basic Coat Colors—

- **Grey/Gray:** Grey is a color modification superimposed over any base color on the body, head, and legs. The coat is a mixture of dark (usually black) and white hairs that become predominantly white with age. The grey horse always has dark/black skin. Markings on light grey horses can best be seen by noting the underlying pink skin in the area of the marking. In the young horse, black hair predominates, but as the horse ages, the white hair increases and the markings tend to fade. A grey horse may have distinct white markings or faded markings and always a grey or black mane, tail, and legs.
- Flea-bitten Grey:** Flecks of the base coat (usually red but may be black) show through a mostly white body color.
- **Roan:** Most of the coat is a mixture of colored (usually red) and white hairs with the head and legs darker than the body. The colored hair predominates. As the horse ages, the proportion of white hair may increase but usually not to the extent this occurs in grey horses. If the red hair comes from the chestnut pattern, the mane, tail, and legs will be red. If the red hair comes from the bay pattern, the mane, tail, and legs will be black. Roan horses may have distinct or indistinct white markings.
- Strawberry roan:** The coat color is a mixture of red and white hairs. The base color is chestnut/sorrel, and the points are not black.

- Blue roan:** Similar to roan except there is a mixture of black and white hairs; the base color is black.
- Red roan:** Also called bay roan. The coat color is a mixture of red and white hairs, but the base color is bay and the points are black.

Patterns Superimposed on Base Colors—

- **Appaloosa:** No single color is associated with Appaloosas. The term describes the appearance of an indefinite number of different white or dark spot patterns on a base color or solid white area. The spotted areas classically appear on the hip but may also occur on the loin, back, or over the entire body. The colors are named as the base color followed by “Appaloosa” (e.g., bay Appaloosa, blue roan Appaloosa, etc.). As a breed, the color is also associated with mottled or particolored skin typically found around the eyes and on the nose, lips, vulva or sheath; white sclera, and vertically striped hooves. Any combination of white markings is possible.
 - Leopard Appaloosa:** Has the appearance of a white horse covered with dark spots that are usually reddish.
- **Pinto:** Any of several breeds of horses that have large, irregular, asymmetric areas of white (with underlying pink skin) and a base color on any area of the body. Any base color is possible. This color is either named by the base color (e.g., chestnut pinto) or by describing the colors seen using common terms (e.g., red and white pinto). Although a specific breed and color registry, the term “paint” is often used interchangeably with “pinto” (e.g., black and white paint).
 - Overo:** Pinto pattern characterized by white that usually does not cross the back. At least one leg and often all four are dark colored, the body is often predominantly the base color, and the tail is usually one color.
 - Tobiano:** Pinto pattern with white across the back. Flanks are usually dark colored, generally all four legs are white, and the tail is often two color.
 - Tricolor:** Nontechnical term for a pinto with black (usually in the mane or tail) and white areas on top of a base color.

Dilution Modifications of Base Colors—

- **Buckskin:** A cremello dilution modification of any base color. Typically a gold or yellowish body color with a black mane and tail. Buckskins are usually black on their lower legs. Usually buckskin is used to describe horses without a dorsal stripe.
- **Dun:** Usually used as a general term for any of several light or dilution colors with a dark dorsal stripe (linebacked dun). Body color can be yellowish or gold as if a buckskin or more red as if a chestnut. Mane and tail may be black, brown, red, yellow, white, or mixed. Other primitive markings such as zebra stripes on the legs or a transverse stripe across the withers may be present.
 - Red dun:** A chestnut/sorrel dun with the body yellowish red; mane, tail, and dorsal stripe are darker red.

- **Palomino:** Body color is usually a golden yellow; mane and tail are blonde or almost white. Palominos do not have dorsal stripes.
- **Grullo:** Usually characterized by slate- (blue-grey) or mouse- colored hair (not a mixture of black and white hairs, but each hair is mouse colored) on the body with black mane and tail. Body color may be darker shades of beige. Grullos are usually black on their lower legs.
- **Cremello:** The palest horses that are not white. Usually very light beige or cream colored. Cremellos have pink skin and blue eyes.
- **White:** A rare coat color of pure white with pink skin and dark-colored eyes. White horses are not true albinos; albinos have pink eyes. Horses that appear to be white but have dark skin are actually grey.

Donkey Colors—Some donkey colors are the same as those of horses; others are unique to the donkey. The points of a donkey are different from those of a horse. When describing the color of donkeys, “points” refer to the muzzle, eye rings, belly, and inside of the upper leg, which are almost always cream-colored. Cream-colored points may be called “white points” or “light points.” The color of a donkey’s points does not affect the name of the body color, but points are usually described separately as light as opposed to dark, blue, or black points. The areas described as points in horses (mane, tail, ear rims) are called trim when describing donkey colors but have the same significance when naming colors.

- **Grey (Dun):** This is the most common coat color of donkeys and is ash grey or bluish slate color with a dark dorsal stripe. This is not a true grey as in horses, because it does not become lighter with age. Cream-colored points are typical.
- **Blue Burro:** Another name for the grey dun.
- **Black, Brown, Dark Brown, Black-Brown:** Each refers to that body color with light points unless otherwise noted.
- **Red, Chestnut, Sorrel:** Refers to a chestnut, sorrel, or reddish body color.
- **Pink:** Very light strawberry red color. May have pink skin.
- **Spotted:** White spots on body of any base color; it can also appear like dark spots on white.
- **Roan:** White hairs mixed with colored hairs on body and head.

Markings

Natural markings include patterns of white on the head and legs, hair whorls (cowlicks), scars, and blemishes. Many white markings on the head and legs have common terms in the horse world. As determined by the purpose, white markings may be simply named, drawn in a picture, described in detail, or photographed. White markings always have underlying pink skin, which is sometimes used to describe the exact margin of the marking (e.g., “connected strip and snip extending into left nostril”). Most markings are solid white, but they can be mixed with the

base coat color. Leg markings are always named by the most proximal extent of the marking on a given limb (fig. 5). Leg markings may be described by naming the anatomic location of the most proximal extent of the marking (e.g., cannon) or using traditional terms (e.g., sock). The anatomic terms are preferred for identification purposes because not all breed registries agree on the lay terms.

Markings that have been produced after birth are considered acquired markings. Tattoos, brands, freeze marks, scars, and pin-firing marks are the most common examples. The location and shape of these marks are sometimes also described as markings. On plain-colored horses without natural white markings, these features can be very useful along with hair whorls to identify a horse. Other variations seen on the coat are not generally considered markings. **Dapples** are a repeating pattern of slightly darker and lighter hair in small circles. Dappling is most common on grey horses but may occur with any color. Dappling is not permanent but may vary in any particular individual with season, nutritional status, or physical condition. For this reason, dapples are not generally recorded for identification. Ticking is small spots or flecks of white hair often only consisting of several adjacent white hairs that can occur in the base coat. Ticking tends to increase with age. Ticking can generally be noted when identifying a horse, but the exact location and amount of ticking may change over time.

Common White Head Markings (fig. 4)—

- **Star:** A white spot or any shape found on the forehead above the rostral corner of the eye. The location, size, and shape can be described or drawn in relation to other structures of the face where appropriate.
 - **Bordered star:** Having the coat color mixed with the white hair along the outer edge.
- **Strip:** A white marking on top of the nasal bones starting at the eye level or below and ending on or above the proximal edge of the nostrils. May be connected or disconnected to a star. The width, length, and type (connected, disconnected, broken) can be drawn or described as needed. Also sometimes erroneously called a stripe.
 - **Bordered strip:** The coat color is mixed with the white hair along the outer edge.
 - **Broken strip:** The strip is disconnected from itself at one or more points.
- **Snip:** A separate white or flesh-colored marking usually found between the nostrils. May extend into the nostril or to the upper or lower lip according to some breed registries.
- **Upper/Lower lip, chin:** White or flesh-colored markings in these areas named separately by some registries. Also sometimes called a chin spot or patch.
- **Star/Strip/Snip/Upper/Lower Lip Connected:** Any of the adjacent combinations of these markings may be described as connected when they touch.

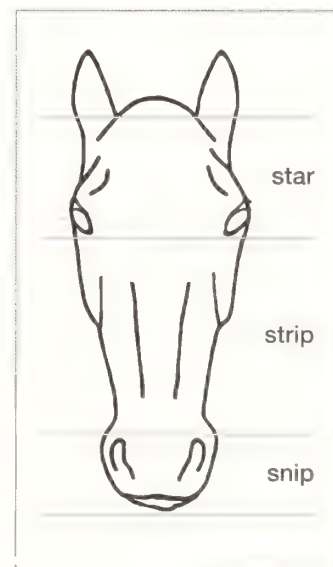


Figure 4—White markings on the head of equids are named according to their location. Many combinations of connected or disconnected markings are possible (e.g., “strip, snip” or “star, strip snip connected”).

For example, “star and strip connected, lower lip disconnected” or “star, strip, and snip connected.”

- **Stripe:** Usually used to describe a long, narrow star, strip, and snip connected.
- **Blaze:** A wide, connected star, strip, and usually snip extending laterally below the top of the nasal bones but not including the eyes or nostrils.
- **Bald:** A very wide blaze including at least one eye and usually both nostrils.

White Leg Markings (fig. 5)—

- **Partial heel:** The medial (inside) or lateral (outside) heel may be white; called a partial heel on the white side.
- **Heel:** Both heels (the entire heel) of the hoof may be white.
- **Coronet/Coronary band:** White begins at the hoof and extends proximally about an inch or less than halfway up the pastern.
- **Half-pastern:** The leg is white from the hoof up to and including the lower half of the pastern.
- **Pastern:** The leg is white to the top of the pastern below the fetlock.
- **Fetlock/Ankle:** White extends up to the top of the fetlock.
- **Half-Cannon/Half-Stocking/Sock:** White extends from the hoof up to and including the lower half of the cannon bone.
- **Cannon/Three-quarter Stocking:** White extends to the proximal end of the cannon bone below the carpus (knee).
- **Knee/Hock/Stocking:** White extends up to or just to the top of the carpus (knee) or tarsus (hock).
- **Above Knee/Hock, High White:** White extends above the carpus (knee) or tarsus (hock).
- **Ermine spots:** Refer to small, dark spots in white leg markings that are usually found just above the hoof.

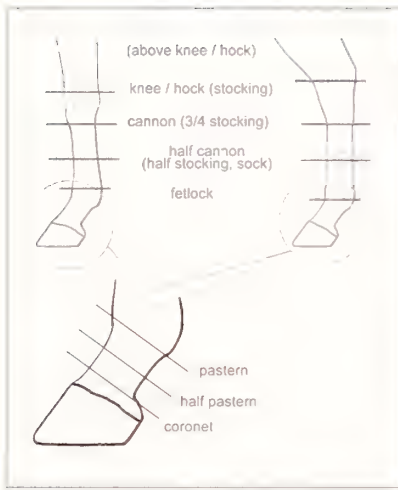


Figure 5—*Leg markings are described by naming the most proximal extent of the white area on each limb.*

Other Natural Markings

- **Hair Whorl/Rosette/Cowlick:** Hair whorls are patterns, usually circular, in which the direction of hair growth changes. Hair whorls are permanent and cannot be brushed away or clipped out. There is usually one whorl in the center of the forehead, often between the eyes. These single whorls are not typically described as unique markings; however, the distance above or below the eye level could be noted. Less frequently, two or more whorls are found on the forehead. When present, the number and locations of multiple whorls should be described if appropriate. The presence (and location if present) or absence of any whorls or cowlicks on the side of the neck near the mane can also be a useful aid in identification, particularly when a horse has few white markings and no tattoo, brand, or similar feature.

- **Dimples/Prophet's thumbprints:** Permanent, easily seen indentations in muscles just under the skin. Dimples are usually found at the point of one or both shoulders and in the neck muscles.
- **Curly coat:** A rare variation of hair growth resulting in exceedingly curly body, mane, and tail hair. The curly trait is inherited and is not related to hirsutism. The curly appearance occurs to varying degrees but usually affects the mane and tail (as opposed to hirsutism), and curly horses may shed out their mane and tail in addition to their body coat in the spring.
- **Chestnuts (on the legs)/Night eyes:** Chestnuts are hard, horny growths or patches of cornified skin found inside the horse's legs. Chestnuts may grow long but when flat have a distinct shape. The presence, location, and shape of the chestnuts can help uniquely identify a horse.

Acquired Equine Markings

- **Tattoos:** The tattoo is a group of numbers with or without a letter applied to the underside of the upper lip. In Thoroughbred horses, the letter indicates the birth year of the horse (A=1997, B=1998, etc.), and the numbers correspond to the numbers found on the registration certificate. Imported Thoroughbreds have an asterisk rather than a letter in their tattoo.
- **Scars:** Many scars produced by accident are permanent and can be seen throughout the life of the horse; they should therefore be noted.
- **Pin firing marks:** Although not common today, the procedure of pin firing the legs of a horse leaves permanent scars. This information can be useful for identification.
- **Brands:** A hot or cold (freeze mark) brand may be found on various areas but is most commonly found on the hip or neck. Some brands are for breed or farm identification; others use numbers or symbols unique to each horse. For example, the Bureau of Land Management uses an angle-numeric system for recording unique numbers on the left side of the neck under the mane (fig. 6).

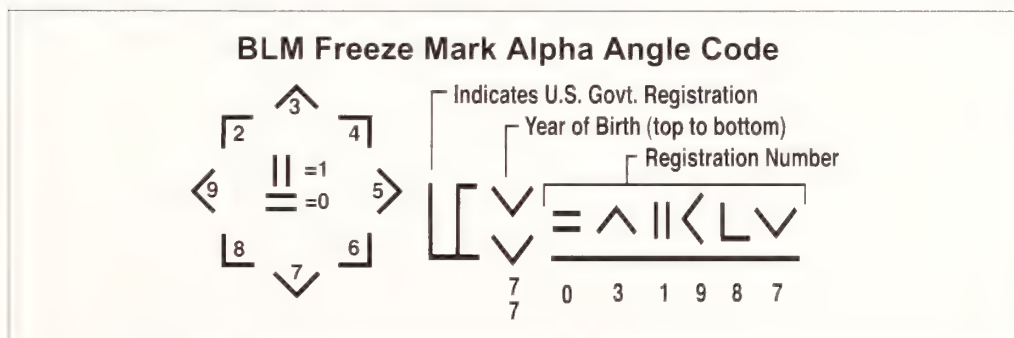


Figure 6—The Bureau of Land Management (BLM) applies a unique angle-numeric freeze mark to the left side of the neck, under the mane, on each wild horse or burro it removes from the range.

Equine Teeth and Aging

The age of horses, donkeys, and mules can be estimated by examining the eruption and wear patterns of the teeth. Figures 7 through 9 provide a usable reference to help the accredited veterinarian approximate a given horse's age. These figures are reprinted with the permission of the American Association of Equine Practitioners from the "Official Guide for Determining the Age of the Horse."

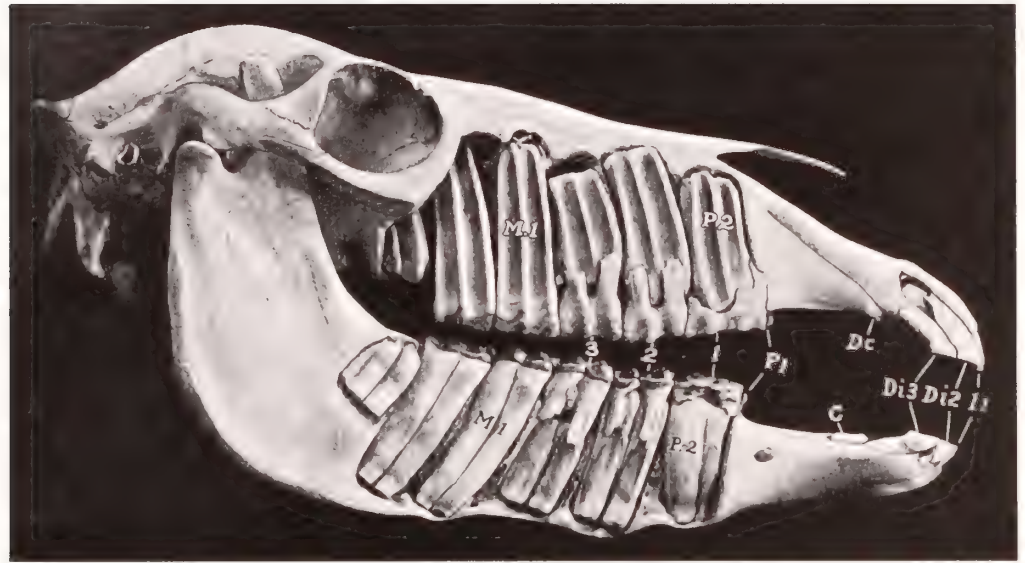


Figure 7—Skull of a colt, 2½ years old, sculptured to show embedded parts of teeth. Both permanent and deciduous cheek teeth are shown. I 1 = first permanent incisor. Di 2 and D 33 are second and third deciduous incisors. Dc = deciduous canine. C = permanent canine. P 1 = first premolar ("wolf-tooth"). 1, 2, and 3 are deciduous premolars. P 2 = first permanent premolar. M 1 = first molar.

In determining the age of a horse by its teeth, the examination is usually limited to the incisors. Eruption of the premolars and molars (cheek teeth) is a fairly accurate indication of age but is used infrequently. After the permanent teeth are in wear, determination of age becomes more difficult and quite speculative. No single feature or sign alone should be considered as reliable; all signs must be evaluated carefully.

The eruption table given here is from Sisson and Grossman (19xx).

Eruption of the Teeth

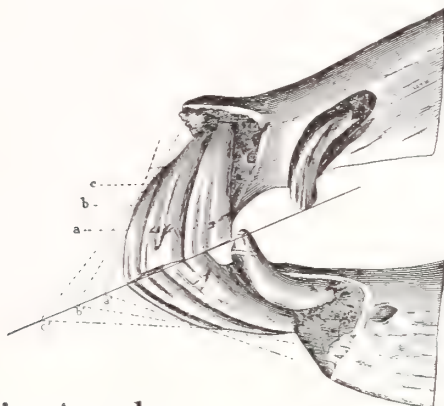
The subjoined table incidates the average periods of the eruption of the teeth.

TEETH	ERUPTION
A. Deciduous:	
First incisor	(Di 1) Birth or first week
Second incisor	(Di 2) 4–6 weeks
Third incisor	(Di 3) 6–9 months
Canine	(Dc)
First premolar	(Dp 2) Birth or first 2 weeks
Second premolar	(Dp 3) Birth or first 2 weeks
Third premolar	(Dp 4) Birth or first 2 weeks

B. Permanent:

First incisor	(I 1)	2½ years
Second incisor	(I 2)	3½ years
Third incisor	(I 3)	4½ years
Canine	(C)	4–5 years
First premolar or wolf-tooth	(P 1)	5–6 months
Second premolar	(P 2)	2½ years
Third premolar	(P 3)	3 years
Fourth premolar	(P 4)	4 years
First molar	(M 1)	9–12 months
Second molar	(M 2)	2 years
Third molar	(M 3)	3½–4 years

(The periods given for P 3 and 4 refer to the upper teeth; the lower ones may erupt about 6 months earlier.)



The Incisive Arcades

When the incisors are viewed **in profile**, the angle between the upper and lower incisors becomes more acute with age.



Schematic Drawing of Incisors, Irregular Wear

Illustration depicts teeth of excessive length, which may have resulted from too-acute angulation at an early age, improper wear, or maintenance of the horse of a soft diet. Each line on the corner tooth represents **approximately** 1 year's growth. If **table** (occlusal) **surfaces** of incisors indicate age of 10 years and teeth were as illustrated, showing 10 lines, the age of the horse may be estimated as 20. (Number of lines added to indicated age of table surfaces equals estimated age.)

Schematic Drawing of Central Incisor

Appearance of the table (occlusal) surfaces at different stages of wear.

1—shortly after eruption its breadth (transverse, long diameter) marked by a–b, its thickness (short diameter) c–d.

2—shows the table surface as it appears at the age of six years, the breadth, a–b, begins to decrease, and the thickness, c–d, increases slightly; the tooth appears oval.

3—shows a round surface of nine to twelve years. The two diameters become equal.

4—shows a triangular surface of fourteen to seventeen years. The long diameter, c–d, in the labiolingual direction.

5—shows surface of animal over twenty in which breadth, a–b, measures only half as much as thickness, c–d.

6—depicts exposed incisor.

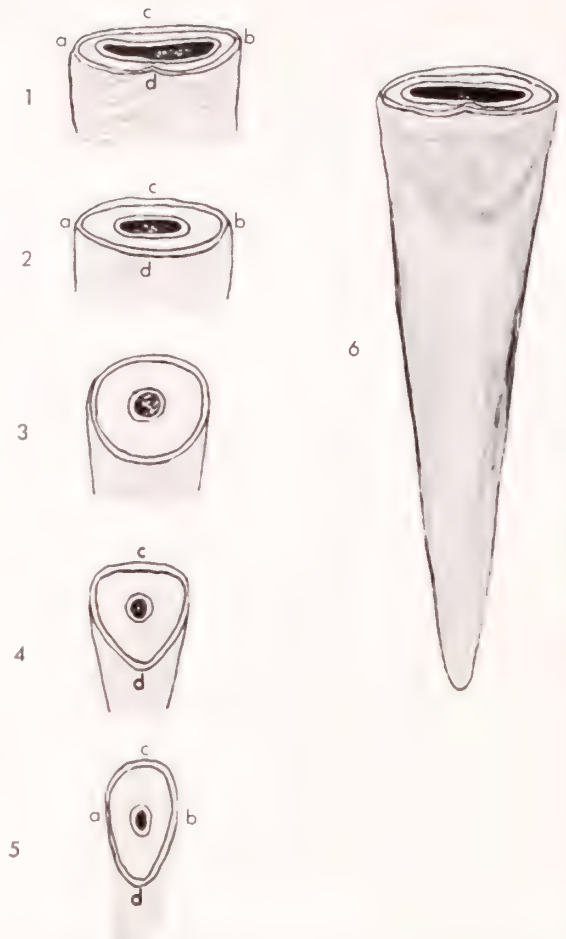
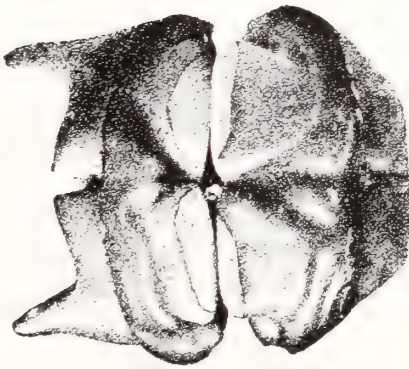


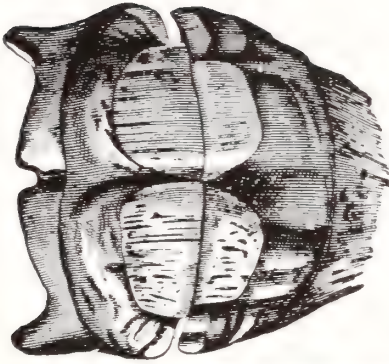
Figure 8—A schematic drawing of the central incisor of the horse at various different ages. (Adapted from the “Official Guide for Determining the Age of the Horse,” published by the American Association of Equine Practitioners.)

Figure 9 (pages 11–19—11–31)—Equine incisors at various ages. (Scanned from the “Official Guide for Determining the Age of the Horse,” published by the American Association of Equine Practitioners.)



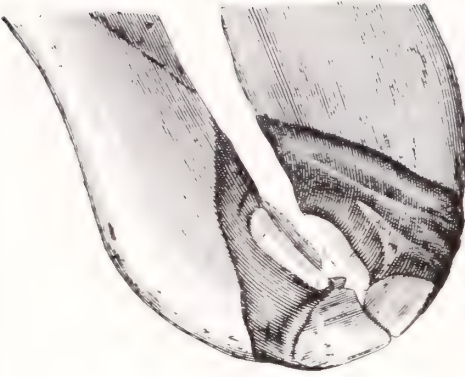
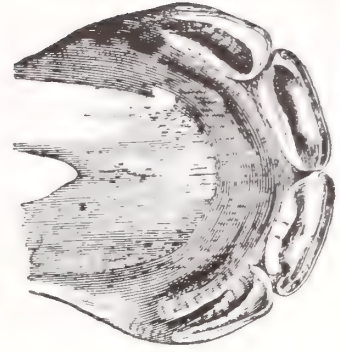
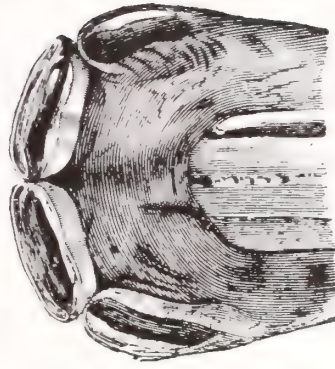
Birth to Two Weeks

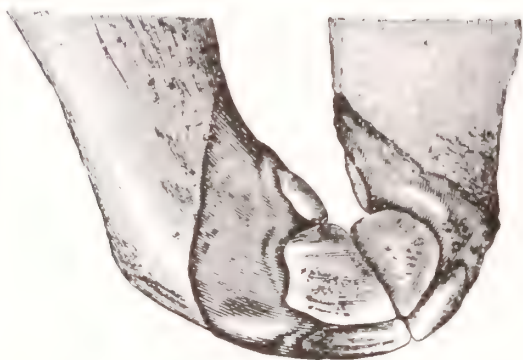
The central incisors (I 1) have erupted; the gum (gingival) covers the other incisors. Viewed from in **front**, the labial border of the centrals is visible in both jaws. In **profile**, the mucous membrane thinly covers the intermediate incisors (I 2). The **dental tables** (masticatory or occlusal surfaces) show the exposed labial (anterior) borders of the centrals and marked depression over the lingual posterior borders.



Four to Six Weeks

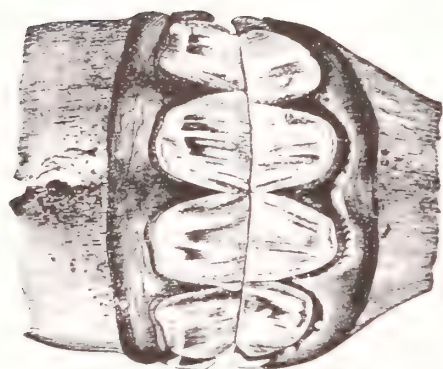
Viewed from in **front**, the centrals (I 1) are in contact, the lower with the upper (superior with the inferior). The labial surface of the crown presents delicate vertical ridges and grooves. The intermediates (I 2) have emerged through the gums (gingivae). In **profile**, the jaws appear thick; the gum may cover a small portion of the intermediates. The **dental tables** of the centrals are slightly worn; the intermediates show no wear; the cup of each is deep.





Six to Ten Months

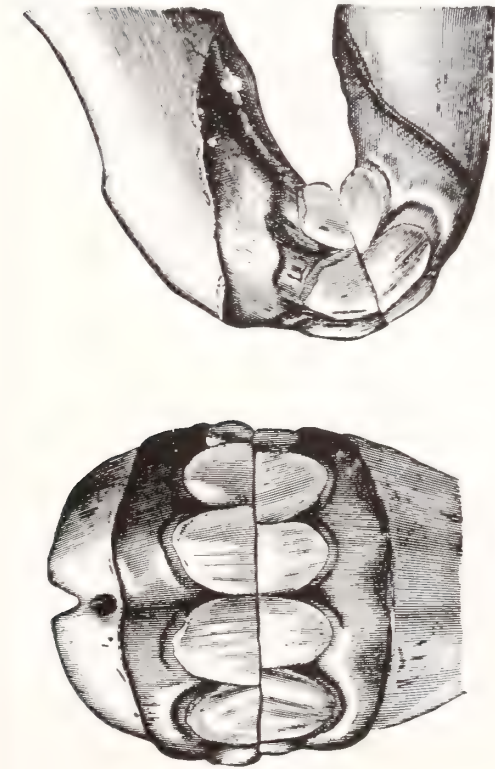
Viewed from in **front**, the central (I 1) and intermediate incisors (I 2) are in contact, the crown of each fully exposed. The labial surface of these teeth is quite polished; the delicate vertical ridges and grooves are less salient. In **profile**, the corner incisors (I 3) have emerged from the gums but are not in contact. The **dental tables** of the centrals and intermediates show wear; the cup is shallower in the centrals than in the intermediates.



One Year

Viewed from in **front**, all deciduous incisors are visible, the crown of the centrals and intermediates is fully exposed, and the neck may be discernible. In **profile**, the upper and lower corner incisors are not in contact. The **dental tables** of the centrals show considerable wear. The dental star is seen usually in the centrals and intermediates as a dark or yellowish-brown transverse line in the dentin on the labial side of the infundibulum. The corner incisors are sharp.





Twenty Months

Viewed from in **front**, the gum encircles the necks of the central and intermediate incisors; the incisive arcades present a marked convexity. In **profile**, all incisors are in contact (the lower with the upper). The **dental tables** of the centrals and intermediates are worn. The corners show some wear. (It is imperative that all features be evaluated carefully; the amount of wear varies considerably in different individuals. Cheek teeth should be considered at this age.)



Two Years

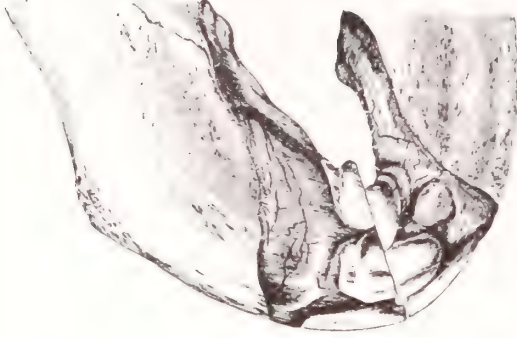
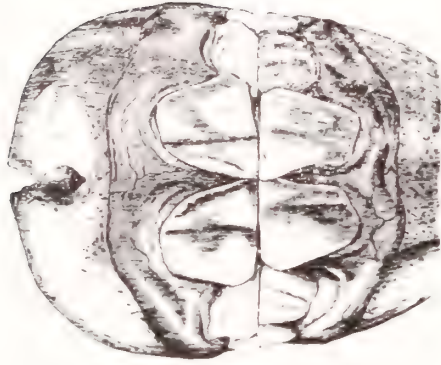
Viewed from in **front**, the central and intermediate incisors are quite free from the gum, the upper incisors particularly. There may be swelling of the gums around the central incisors. In **profile**, the neck of the corners is visible. The **dental tables** of the lower centrals are smooth, the intermediates show decided wear, and the corners show considerable wear; the dental star is clearly visible in the lower incisors. The central enamel of the upper intermediates usually forms a complete circle. The incisive arcades are wide transversely and somewhat depressed in the region of the centrals and intermediates. (Correlate with cheek teeth.)





Two and One-Half Years

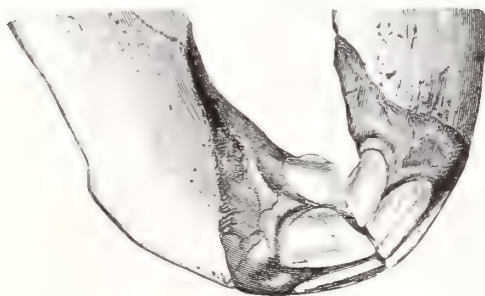
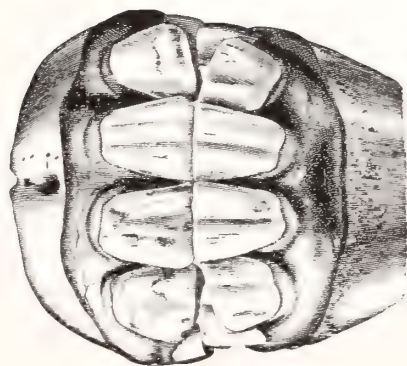
Viewed from in **front**, the two upper permanent central incisors have erupted; they have not reached the level of the deciduous intermediates. The lower permanent central incisors have erupted through the gum; the mucous membrane covers much of the labial surface. In **profile**, the intermediates and corners show distinct necks; the crown of the corners is short. The dental table of the intermediates is decidedly worn to smooth; the corners show decided wear.



Three Years

Viewed from in **front**, the four permanent central incisors are seen just coming into wear. They appear more solid, have salient vertical ridges and grooves, and are larger and broader than adjacent deciduous teeth. In **profile**, the deciduous intermediates appear pushed out and short. The neck is distinct on the intermediates and corners. The **dental table** of each central incisor has a deep cup, and the borders of these teeth are sharp. The lower corners have little central enamel.



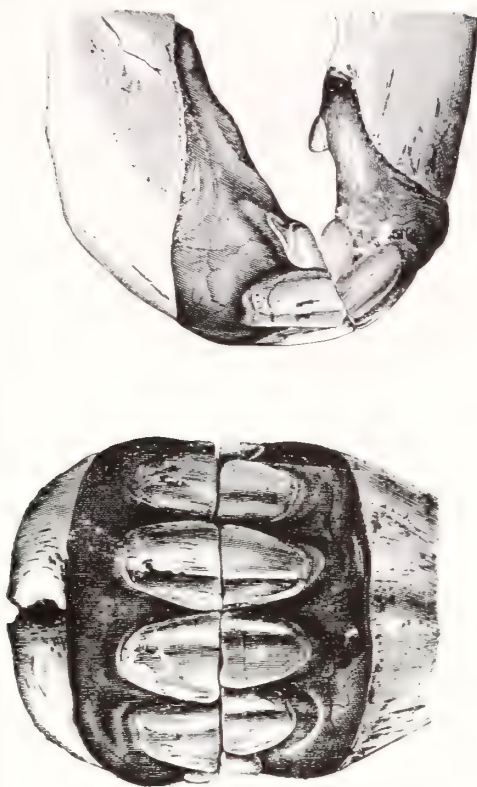


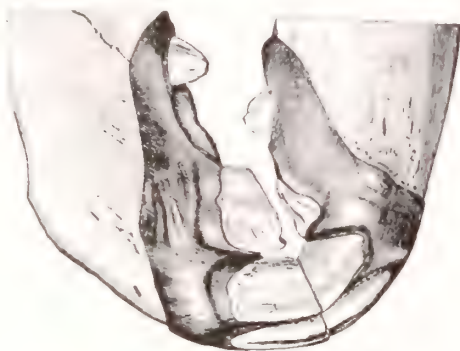
Three and One-Half Years

[rising four]—Viewed from in **front**, each jaw shows four permanent incisors; the centrals in contact; the intermediates, which emerged from the gums at 3½ years, are nearing contact. In **profile**, the interval between the upper and lower intermediates is visible; the corners appear narrower. The **dental tables** show wear in the centrals; the intermediates are sharp; the deciduous corners are nearly smooth.

Four Years

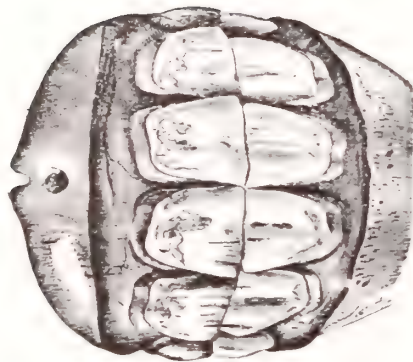
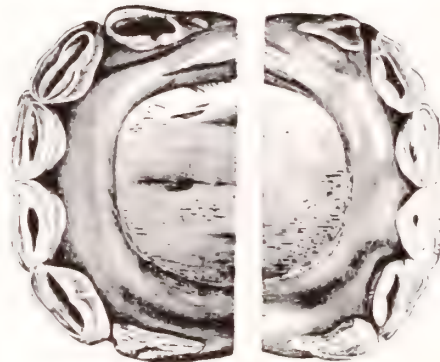
Viewed from in **front**, the permanent upper central and intermediate incisors are in contact with corresponding lower teeth. The jaws have acquired so much width for the centrals and intermediates that the deciduous corners can scarcely be seen. In **profile**, the corners appear very small; the upper corner is shown being pushed from its alveolus. In the lower jaw, the canine is seen cutting the gum. (Canines may erupt as early as 3½ years but usually at 4 years and 3 months and as late as 5 years.) The **dental tables** of the centrals show wear, but their cups are deep. The intermediates are in wear but sharp; the deciduous upper corners show a portion of their roots exposed.





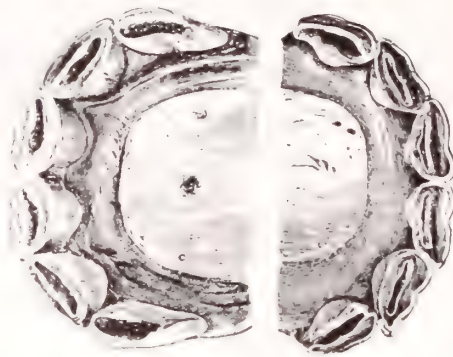
Four and One-Half Years

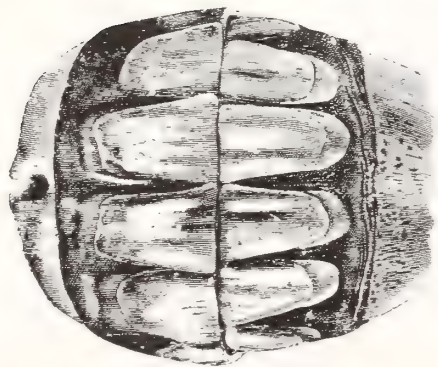
Viewed from in **front**, the central and intermediate incisors of the upper jaw are in contact with those of the lower. The permanent corners are visible, having emerged through the gums. In **profile**, it is easy to see that the corner incisors have erupted but are not in contact. The upper and lower canines are erupting and are sharp. The **dental tables** possess distinct cups in the centrals and intermediates; the erupting corners are very sharp.



Five Years

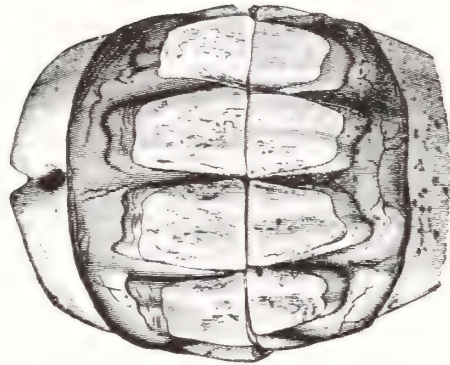
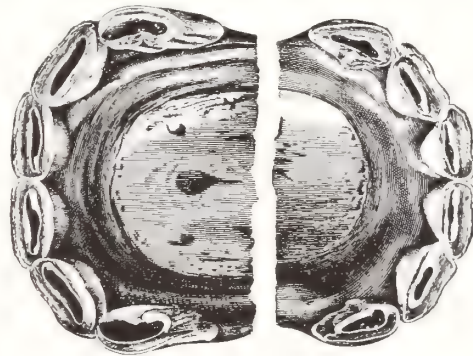
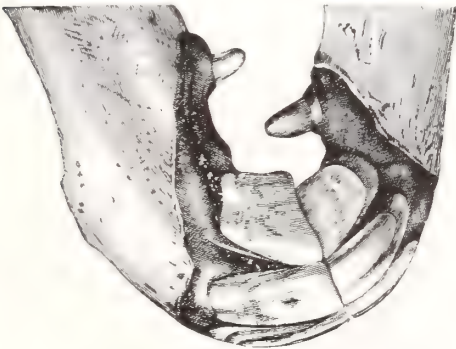
Permanent dentition is complete; all teeth are in wear. Viewed from in **front**, the jaws appear convex in both directions. In **profile**, they have a similar disposition. The canines have erupted completely. The **dental tables** of the centrals and intermediates are wide and transversely and show wear, but their cups are readily visible and completely encircled by the central enamel. The corners are commencing to wear at their labial border. (It is imperative that the form and dimensions of the central enamel be considered carefully.)





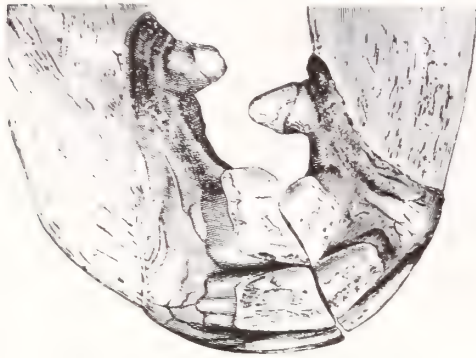
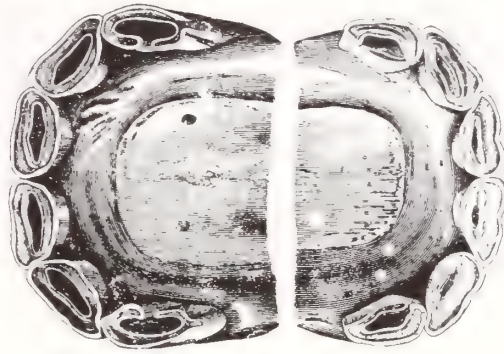
Six Years

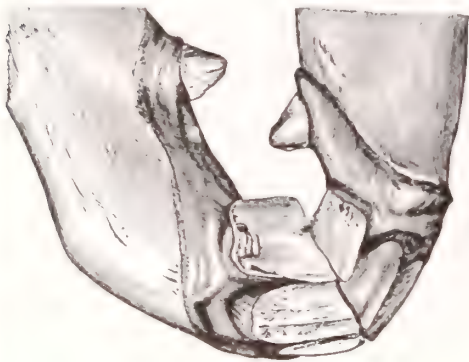
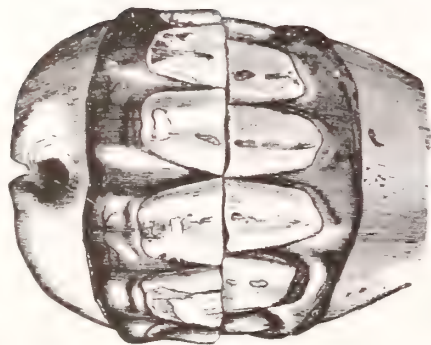
Viewed from in **front**, the jaws present almost the same features as at 5 years. In **profile**, the canines have reached their full length and are in wear. The **dental tables** are fairly reliable age indicators when correlated with other features. The lower centrals are usually smooth, and the dental table is not as wide transversely as at 5 (tending to be oval). The central enamel is not as wide transversely and closer to the lingual surface than at 5 years. The intermediates present distinct cups but otherwise are similar to the centrals; the corners show wear.



Seven Years

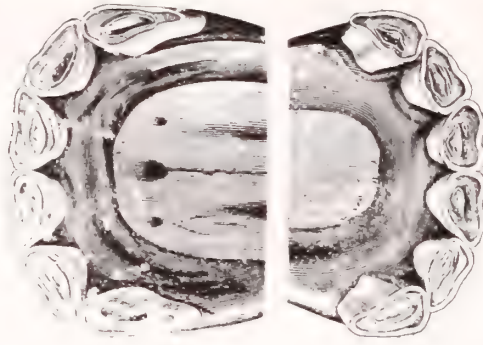
Viewed from in **front**, the teeth may appear whiter due to wearing of the cement, although some teeth remain stained. In **profile**, the dental table of the lower corner incisor is narrower than that of the upper; this results in a notch upon the upper incisor, the 7-year hook or notch. The incident angle of the incisive arcades is less perpendicular than at 6 years. The **dental tables** of the lower centrals and intermediates are smooth; for practical purposes, the cups are no longer present. The ring of central enamel is narrower from side to side and nearer the lingual border. The lower corners still retain their cups.





Eight Years

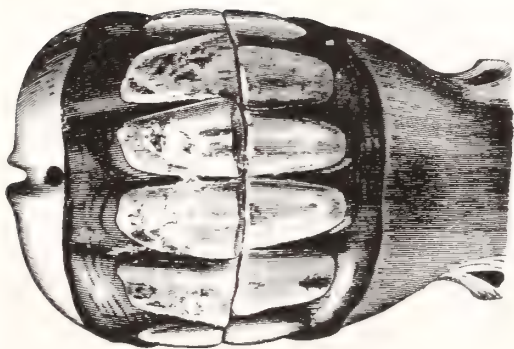
The direction of the incident angle of the incisors has changed: the upper and lower incisors are opposed somewhat obliquely. Viewed from in **front**, the teeth project slightly at the line of apposition; this is more noticeable in **profile**. The lower **dental tables** are smooth, and the cups are gone. The central and intermediate incisors are oval. The dental star has appeared in the centrals and commences to make its appearance in the intermediates. (The dental star appears first as a dark yellow or yellowish-brown transverse line in the dentin on the labial side of the infundibulum of the permanent central incisor at 8 years.)



Nine Years

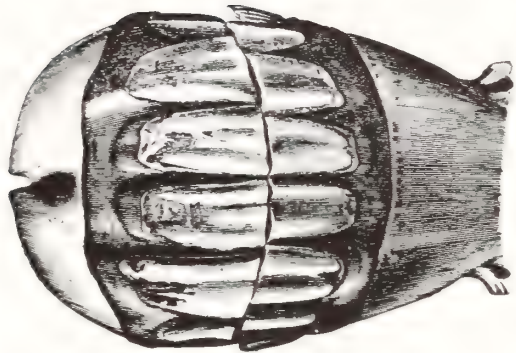
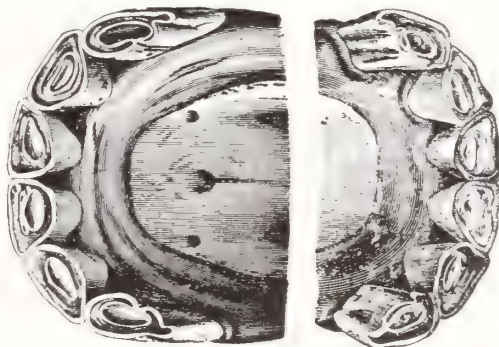
Nothing special is seen from in front. In **profile**, the 7-year hook has generally disappeared. The distal end of Galwayne's groove may be visible at the margin of the gum on the labial surface of the upper corner incisor. The features of the **dental tables** are quite characteristic at this age. The centrals are round; their central enamel tends to be triangular; their dental star is more distinct and narrower and nearly in the center of the dental tables. The intermediate incisors are becoming round; the corners are oval. In the upper arcade, the centrals are sometimes smooth; the cup is distinct in the intermediates and deep in the corners. (Cups in the upper incisors are of little value in age estimation.)





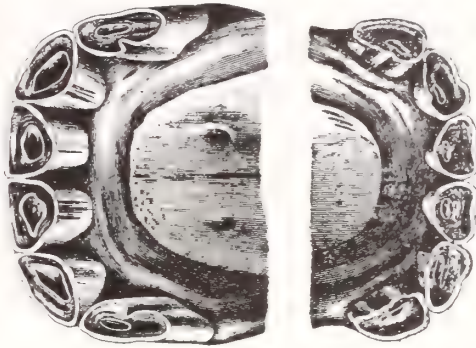
Ten Years

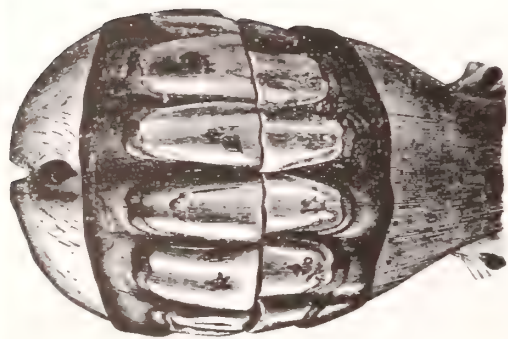
When viewed from in **front**, the jaws are more prominent due to the increased obliquity of the teeth. In **profile**, this feature is accentuated. The **dental tables** of the lower centrals and intermediates are round; the corners, oval to round. The central enamel is triangular in the centrals and close to the lingual border. The dental star is more distinct and near the center of the teeth. In the upper arcade, the intermediates are nearly smooth; the cups, shallow or disappearing. The distal end of Galvayne's groove should be visible on the upper corner incisor. (Evaluate all signs carefully; give special consideration to the length of the incisors.)



Eleven Years

The angle of the jaws increases in obliquity; the head of the horse may need to be raised in order to see the teeth properly from in front. In **profile**, the upper corner shows greater obliquity than the intermediate and generally has a hook or notch near its posterior border. The **dental tables** of the lower centrals and intermediates have become round. The central enamel of each lower incisor forms a small ring close to the lingual border; the dental stars are narrower transversely and near the center of the dental table. In the upper jaw, the cups of the corner incisors are elliptical and tend to disappear.



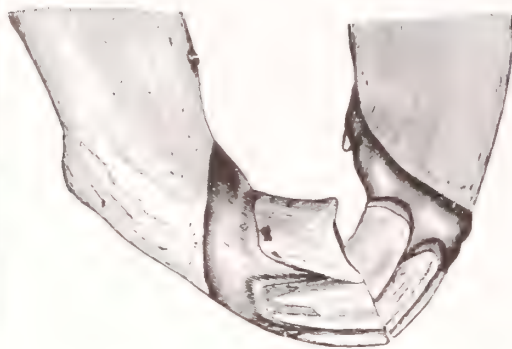
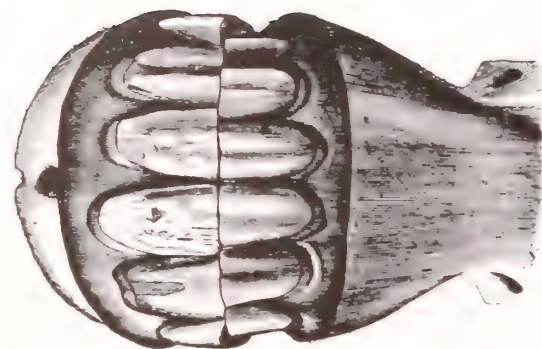


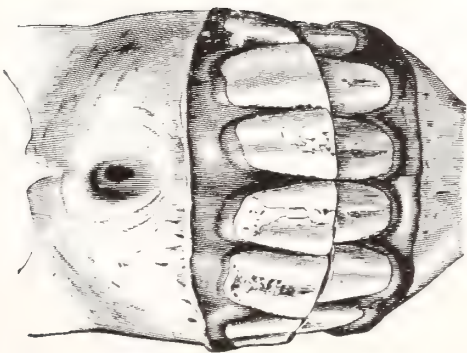
Twelve Years

The obliquity of the incisive arches has increased further. Both incisive arches are narrower, and the tongue may extend over their borders. In **profile**, the upper corner incisor shows a notch near its posterior border. (This notch appears as early as 11 and may persist until 15.) A distinct interalveolar space separates the intermediate from the corner. The **dental tables** of all lower incisors should be round (breadth and thickness the same). The central enamel is small and round; it is disappearing from the centrals. The dental star is seen as a small yellow spot near the center of the dental tables. The upper corner incisors are nearly smooth. (If wear is normal, the animal will have a smooth mouth at 11 to 12 years.)

Thirteen Years

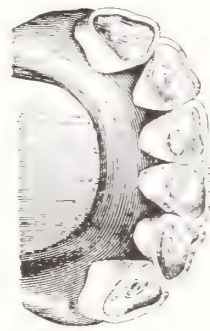
Viewed from in **front**, the appearance is similar to that of 12 years. In **profile**, the notch on the upper corner may be deeper and more marked. The **dental tables** of the lower centrals may appear round to triangular. The central enamel in the lower incisors is small and round and in many cases disappearing. The yellowish dental stars are near the middle of the dental tables. (Particular emphasis must be placed upon the shape of the dental tables and **length** of the teeth.)





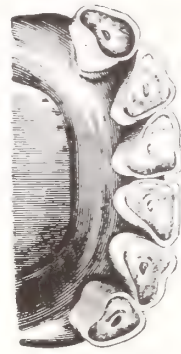
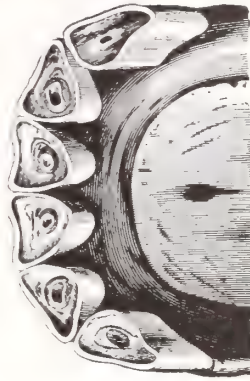
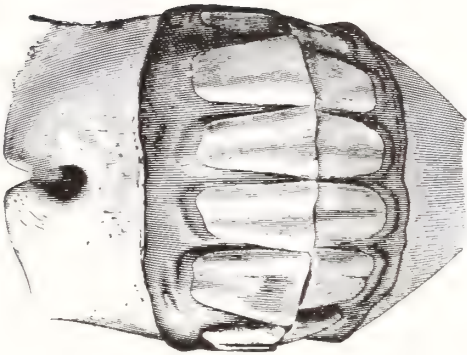
Fifteen Years

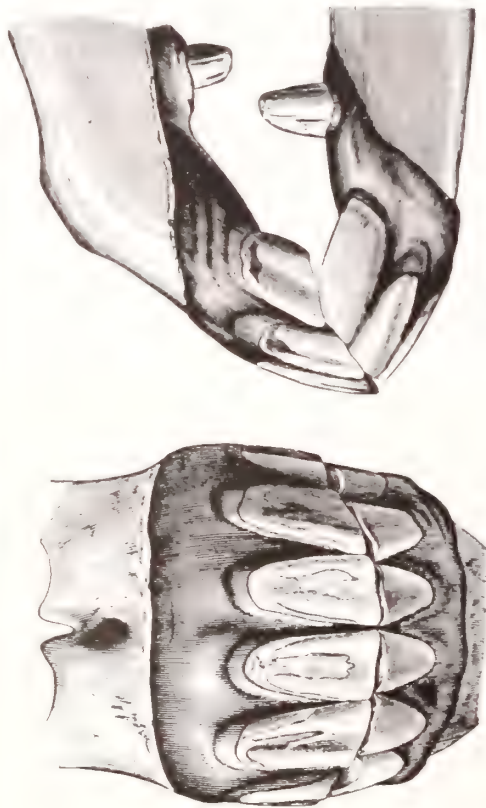
Viewed from in **front**, the lower incisors may appear shorter than the uppers, depending upon the angle from which they are observed. (This will vary depending upon height of horse and examiner.) In **profile**, the incisors appear to be about the same length. Galvayne's groove extends halfway down the labial surface of the upper corner incisor; the corner notch is often present. The **dental tables** of the lower centrals appear triangular; the intermediates are round to triangular; and all lower incisors show in their center a dark, distinct, round dental star.



Seventeen Years

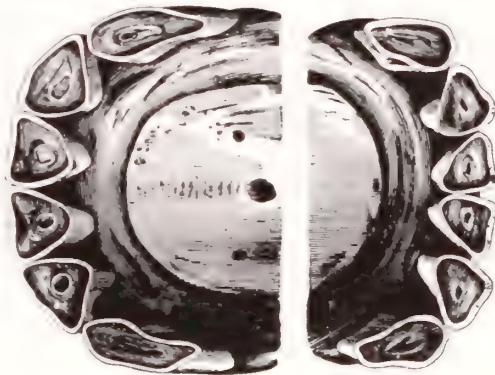
Viewed from in **front**, the upper corner incisors incline toward the median plane. In **profile**, the incisors are very oblique. The **dental tables** of the lower incisors are all triangular; each dental star is round and near the center. The arcade is narrower, and the teeth appear more widely spaced than previously. The dental tables of the upper centrals and intermediates appear to be triangular.



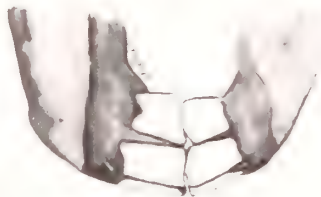


Twenty Years

Viewed from in **front**, the upper corner incisors deviate distinctly toward the median plane; deviation of the intermediates is not as marked. In **profile**, Galwayne's groove extends the entire length of the labial surface of the upper corner incisor. The **dental tables** of the lower incisors are somewhat compressed transversely and may be worn almost to the gum.



Profile of Upper Corner Incisor Galwayne's groove



Nine to Ten Years—Galwayne's groove appears at the gum margin.



Fifteen Years—Galwayne's groove extends halfway down the labial surface of the incisor.



Twenty Years—Galwayne's groove extends the entire length of the labial surface.

Glossary of Terms

Cup. The dark or dark-brown to black cavity in the infundibulum.

Deciduous teeth. Temporary, fetal, milk, or baby teeth. They are characterized primarily by their smaller size, constricted neck, and shallow cup.

Dental star. The darker dentin that fills the pulp cavity as the tooth wears. It is dark yellow to yellowish-brown.

Dental table. The table, masticatory or occlusal surface.

Eruption. Pertains to the period when a tooth breaks through the gum.

Galvayne's groove. The longitudinal depression on the labial surface of the upper corner (I 3) incisor. The cementum remains in the groove as a dark line; the rest of the surface is worn to expose the white enamel.

Incisor teeth. Starting at the midline, incisors are designated as centrals (I1), intermediates (I2), and corners (I3).

Infundibulum. The deep invagination of enamel, which is filled with a variable amount of cement. Commonly referred to as the "cup."

Labial surface. Surface toward the lips.

Lingual surface. Surface toward the tongue.

Permanent teeth. Second dentition or adult teeth.

Sheep and Goat Identification

In addition to listing an animal's age, gender, and breed, use one of the following identification methods. (See fig. 10 for a depiction of sheep dentition, table 7 for information on tooth eruption in sheep, and tables 8a and 8b for lists of goat breeds and sheep breeds.)

- Official sheep and goat eartag;
- Individual animal official registration tattoo when accompanied by registration certificate. See 9 CFR parts 79.2 and 79.3 for exemptions or other options.
- Official tags and tattoos based on the Premises Identification Number that are assigned and recognized by APHIS. (For additional information, call 1-866-USDATAG or contact your local APHIS–VS Area Office.)

Table 7—Eruption and replacement of teeth in sheep

Teeth	Time of eruption ¹	Teeth	Time of replacement ¹
Di ₁ ¹	Before birth—up to 8 days	I ₁ ¹	12–18 months
Di ₂ ²	Before birth	I ₂ ²	21–24 months
Di ₃ ³	Before birth	I ₃ ³	27–36 months
Di ₄ ⁴	Birth—up to 8 days	I ₄ ⁴	36–48 months
Dp ₂ ²	Before birth—up to 4 weeks	P ₂ ²	21–24 months
Dp ₃ ³	Before birth—up to 4 weeks	P ₃ ³	21–24 months
Dp ₄ ⁴	Before birth—up to 4 weeks	P ₄ ⁴	21–24 months
M ₁ ¹	3 months		
M ₂ ²	9 months		
M ₃ ³	18 months		

¹ The lower figures are for early-maturing breeds; the higher figures are for late-maturing breeds.

Adapted from: Schummer, August; Nickel, Richard; Sack, Wolfgang Otto. 1979. The viscera of the domestic mammals, second ed. New York: Springer–Verlag.

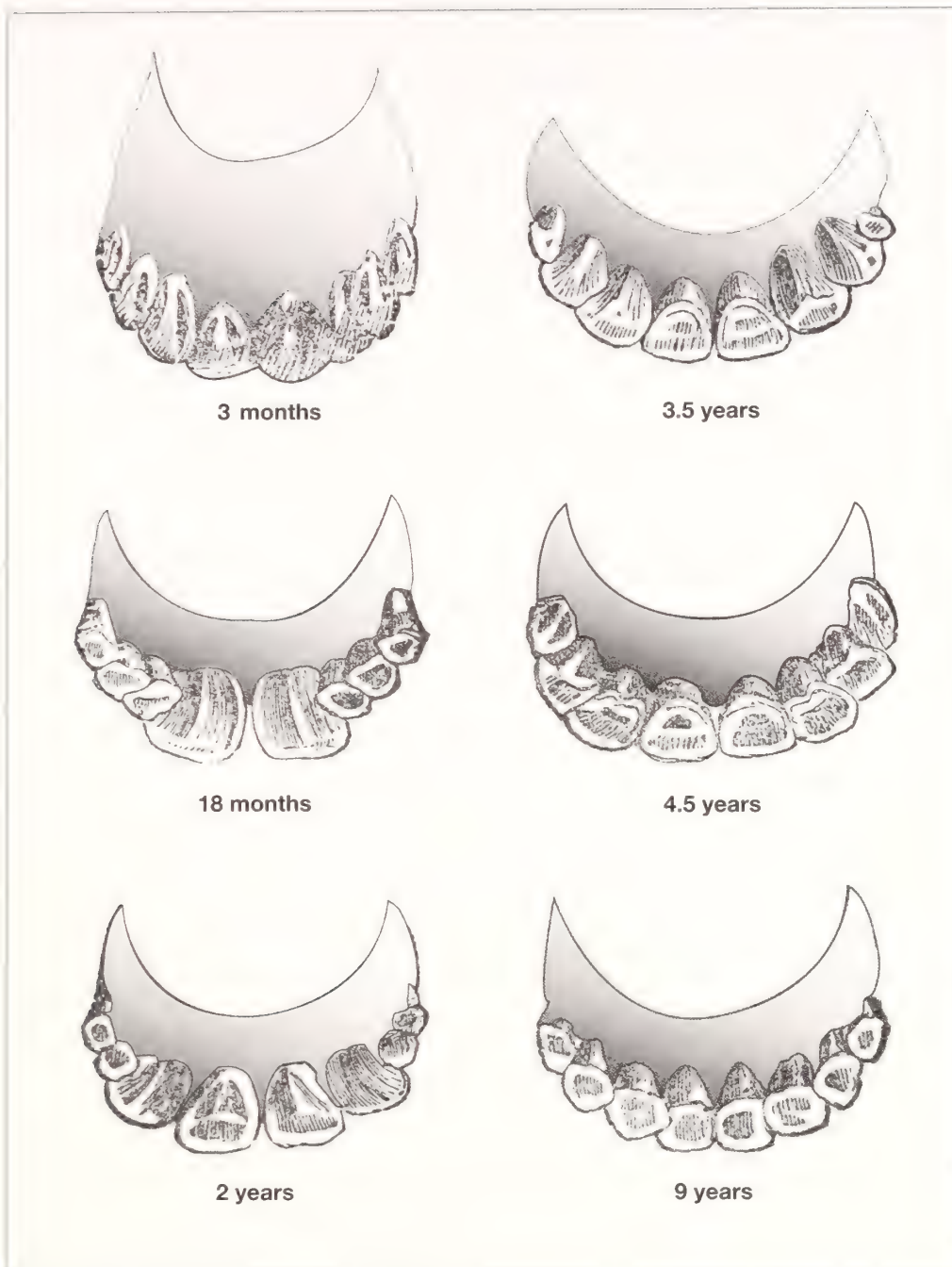


Figure 10—Dentition patterns in sheep. (Scanned from A. Liautard, MD. 1910. *How to tell the age of the domestic animals*. New York: William R. Jenkins Co.)

Table 8a—Goat breed codes

Code	Breed	Code	Breed
AG	Angora	NS	Not specified
AL	Alpine	NU	Nubian
BO	Boer	OB	Oberhasli
CS	Cashmere	OT	Other
KI	Kiko	PG	Pygora
LN	LaMancha	PY	Pygmy
MU	Multiple breeds present	SA	Saanen
MX	Mixed breed	SP	Spanish
MY	Myotonic	TO	Toggenburg
ND	Nigerian Dwarf	XX	Crossbred

Table 8b—Sheep breed codes

Code	Breed	Code	Breed
BB	Barbados Blackbelly	CH	Charolais
BC	Border Cheviot	CM	California Variegated Mutant
BD	Babydoll	CO	Columbia
BL	Border Leicester	CP	Coopworth
BM	Booroola Merino	CR	Corriedale
BW	Black Welsh Mountain	CS	Corno
BX	Blackfaced crossbred	CT	Cotswold
CA	Canadian Arcott	CV	Cheviot
CD	California Red	CX	Columbia cross
CF	Clun Forest	XX	Crossbred

Fowl Identification

List the correct species along with either a leg band or a wing tattoo. Leg bands are available from the Official State Representatives for the NPIP. Contact information for these representatives can be found at <http://www.aphis.usda.gov/vs/npip/pdfs/osa-npip.pdf>.

Dog and Cat Identification

List the animal's age, gender, breed, and name along with a collar number, tattoo, or electronic identification if available.

Future Animal Identification

The National Animal Identification System (NAIS) is the new identification system currently under development. The goal of the NAIS is to establish, in cooperation and collaboration with industry and stakeholders, a system that will meet current and future animal-health needs of American agriculture. This system is needed to maintain the economic viability of American animal agriculture. This national animal identification and tracking plan will enhance disease preparedness by rapidly identifying animals exposed to disease, thus allowing quick detection, containment, and elimination of disease threats. Such a system is needed so that international trade will not be adversely affected, the response to FAD outbreaks will be rapid, the response to bioterrorist threats is swift, targeted diseases are controlled or eradicated, and the marketability of animal agricultural products is enhanced.

A national safeguarding review of APHIS conducted in 2002 by the National Association of State Departments of Agriculture cited improvements in animal identification and traceability as a key recommendation. The importance of a national plan to identify livestock in safeguarding the national herd from the harmful effects of disease is underscored by the recent outbreaks of avian influenza, exotic Newcastle disease, and tuberculosis and by the BSE incident in the northwestern United States.

USDA began to implement the NAIS in 2004. Identifying individual animals or a group of animals with unique numbers and associating or linking those numbers to a premises (location) throughout each animal's life in an information system are the basis of the NAIS. These basic and limited data will support the objective of achieving timely animal tracebacks and trace forwards when responding to an animal disease concern.

Traceback refers to the ability to track an animal's location over its lifespan and the ability to determine which animals may have been in contact with the diseased animal or shared a contaminated feed supply. Trace-forward data provide locations of animals moved out of the premises of concern that may have been exposed to the disease. The system will focus on all livestock within the represented industries regardless of their intended use as seedstock, commercial stock, pets, or for other personal uses.

The goal of the NAIS is to have the capability to identify all animals and premises that had direct contact with an FAD within 48 hours after discovery. The NAIS will provide for a system with the ability to trace back and trace forward animals potentially exposed to a disease of concern. The plan calls for the trace to be completed within 48 hours of discovering the disease, thereby helping to contain an animal disease outbreak.

The ability to achieve the 48-hour goal is directly related to the completeness of animal movement data that are reported to the national system. This challenging task will require significant time for its development and establishment. The implementation strategy therefore reflects a phased-in approach to ensure that a workable plan evolves through producer and stakeholder input and participation. Initially, the program will be implemented on a voluntary basis and eventually may become mandatory.

To achieve the 48-hour traceback objective, the movement of individual animals, or “units of animals,” must be recorded. Reporting this information to a central database or creating a seamlessly linked local database infrastructure is necessary to achieve timely traceback and trace forward. Through the NAIS, USDA has defined the data standards for the information required for animal identification and collecting and reporting animal movements. USDA will maintain a technology-neutral position, allowing market forces to drive the implementation of the most practical and effective identification methods and equipment.

All existing forms of official identification and numbering systems for premises and livestock will remain official through a transition period as the NAIS is implemented. It is important that accredited veterinarians make the best possible use of current animal identification methods and procedures during the developmental process and remember there are Federal identification regulations already in place for specific animal classes that must be followed. It is also important to identify animals accurately and record the information required to trace animals in the event of an animal disease outbreak. The safety of the national livestock population is at stake.

To control and eradicate animal diseases, epidemiologists must be able to trace the movement of animals. This goal can be reached only if the animals are properly identified and the individual and premises identifications are recorded. The identification of premises is the foundation of the system and must be established before animals can be tracked.

Compliance and Regulations

Compliance

The forms you submit to APHIS as an accredited veterinarian are scrutinized by VS personnel for accuracy and completeness. When errors or irregularities are found, APHIS management may request help from investigators in the agency's IES unit. But in many cases, the APHIS–VS Area Office first works with the accredited veterinarian to resolve the issue. The role of IES is to gather all the pertinent facts regarding the issue and present them to appropriate VS officials in an investigative case report. VS officials retain the responsibility for determining the appropriate disposition of the investigative case file.

Many of the inquiries that accredited veterinarians receive from IES investigators involve situations in which the interstate movement of livestock failed to meet State or Federal requirements. IES investigators look into allegations that an accredited veterinarian did not abide by the accreditation standards identified in 9 CFR part 161.3.

If you are the subject of an IES investigation, the investigator will explain the alleged violation to you during the interview process. It is important that you present the facts as well as your reasons for handling a situation in a particular way. In accreditation cases especially, VS officials are interested in all the background information regarding the alleged violation. All pertinent case information is compiled and evaluated by VS officials. A decision is then made as to how to proceed with disposition of each case. Dispositions can include letters of information or warning, informal conferences, formal hearings, suspension or revocation of accreditation, and civil and criminal penalties. APHIS strongly supports these quality-control mechanisms in the interest of furthering the agency's mission of protecting American agriculture.

The Role of IES

IES' primary responsibility is to enforce APHIS regulations. IES investigators nationwide provide assistance to VS with the following activities:

- Interviewing and collecting information from accredited veterinarians, witnesses, alleged violators, and others involved in the alleged violations;
- Identifying applicable sections of the CFR, acts, and laws;
- Collecting evidence associated with alleged violations;
- Preparing investigative case files; and
- Working with the VS program to assess appropriate penalties and sanctions.

Your Responsibility for Compliance

The Animal Health Protection Act governs the accreditation of veterinarians as codified in 9 CFR parts 160 and 161. As an accredited veterinarian, you should familiarize yourself with these regulations because you are obliged to comply with these standards. Noncompliance can result in violations and possible administrative, civil, or criminal action. The following are a few examples of violations of the veterinary accreditation standards identified in 9 CFR 161.3 that IES investigators may cite:

- 161.3(b)—Failing to complete an official form accurately and fully. Submitting incomplete forms or leaving sections blank is a violation.
- 161.3(d)—Failing to perform an official test and to submit specimens. Submitting fraudulent blood samples for official testing is a violation.
- 161.3(h)—Failing to keep oneself currently informed on regulations pertaining to procedures applicable to disease control and eradication programs.
- 161.3(j)—Failing to ensure the security and proper use of official certificates, reports, tags, and similar items or documents issued to you. Allowing an unauthorized person such as an owner or a broker to issue official certificates is a violation.

Actions and Penalties

All pertinent case-file information is compiled by IES and evaluated by VS officials. The AVIC, in cooperation with the State animal health official, determines the appropriate action for cases involving violations of Veterinary Accreditation Program regulations. USDA may carry out one or more of the following actions:

- Provide written notification when the accredited veterinarian has not complied with the Standards for Accredited Veterinarian Duties;
- Hold an informal conference; and/or
- Proceed with an administrative hearing before an administrative law judge.

USDA will then determine the final disposition and penalties, if applicable, and may take one or more of the following actions:

- Issue a written notice of warning;
- Suspend or revoke veterinary accreditation; and/or
- Assess civil or criminal penalties.

The provisions of the Animal Health Protection Act do not allow for monetary penalties for violations of the Veterinary Accreditation Program. However, if your actions involve interstate violations of livestock movement regulations or if your actions contribute to any violations of the Animal Health Protection Act other than veterinary accreditation, you may be assessed civil or criminal monetary penalties.

IES Contact Information

IES contributes to the overall APHIS mission to protect American agriculture by providing regulatory enforcement support. IES has investigators nationwide. Its headquarters office is located at

USDA, APHIS

Marketing and Regulatory Programs—Business Services, IES

4700 River Road, Unit 85

Riverdale, MD 20737–1232

If you have any questions about IES, please contact the staff by telephone at (301) 734–8684 or visit the IES Web site at **<<http://www.aphis.usda.gov/ies>>**.

Appendix A—Code of Federal Regulations

SUBCHAPTER J—ACCREDITATION OF VETERINARIANS AND SUSPENSION OR REVOCATION OF SUCH ACCREDITATION

PART 160—DEFINITION OF TERMS

AUTHORITY: 15 U.S.C. 1828; 21 U.S.C. 105, 111–114, 114a, 114a–1, 115, 116, 120, 121, 125, 134b, 134f, 612, and 613; 7 CFR 2.22, 2.80, and 371.4, 9701; 7 CFR 2.22, 2.80, and 371.4.

§160.1 Definitions.

For the purposes of this subchapter the following words, phrases, names and terms shall be construed, respectively, to mean:

*Accredited veterinarian.*¹ A veterinarian approved by the Administrator in accordance with the provisions of part 161 of this subchapter to perform functions specified in subchapters B, C, and D of this chapter.

Administrator. The Administrator of the Animal and Plant Health Inspection Service or any individual authorized to act for the Administrator.

Animal, animals. All animals except humans, including but not limited to cattle, sheep, goats, other ruminants, swine, horses, asses, mules, zebras, birds, and poultry.

Animal and Plant Health Inspection Service. The Animal and Plant Health Inspection Service, United States Department of Agriculture.

APHIS. The Animal and Plant Health Inspection Service.

Approved digital signature. Digital signatures approved by the Administrator for electronic transmission, for example, via a computer. To be approved, a digital signature must be able to verify the identity of the accredited veterinarian signing the document and indicate if the integrity of the data in the signed document was compromised.

Examine, examination. Physical study of an individual animal that enables an

accredited veterinarian to determine if any abnormality in physical condition or bodily function is suggestive of clinical signs of communicable disease.

Inspect, inspection. Visual study of the physical appearance, physical condition, and behavior of animals (singly or in groups) that enables an accredited veterinarian to determine whether any abnormality in physical condition or bodily function is evident.

Issue. The distribution, including electronic transmission, of an official animal health document that has been signed.

Official certificate, form, record, report, tag, band, or other identification. Means any certificate, form, record, report, tag, band, or other identification, prescribed by statute or by regulations issued by the Administrator, for use by an accredited veterinarian performing official functions under this subchapter.

Regular health maintenance program. An arrangement between an accredited veterinarian and a livestock producer whereby the veterinarian inspects every animal on the premises of the producer at least once every 30 days.

Sign, (Signed). For an accredited veterinarian to put his or her signature in his or her own hand, or by means of an approved digital signature, on a certificate, form, record, or report. No certificate, form, record, or report is signed if:

(1) Someone other than the accredited veterinarian has signed it on behalf of or in the name of the accredited veterinarian, regardless of the authority granted them by the accredited veterinarian; or

(2) If any mechanical device, other than an approved digital signature, has been used to affix the signature.

State. Any State, the District of Columbia, Puerto Rico, Guam, the Northern Mariana Islands, the Virgin Islands of the United States, and any other territory or possession of the United States.

State Animal Health Official. The State animal health official who is responsible for the livestock and poultry

¹The provisions of subchapters B, C, and D of this chapter authorize Federal and State veterinarians and accredited veterinarians to perform specified functions. Full-time Federal (including military) and State employed veterinarians are authorized to perform such functions, pursuant to delegation of authority by the Administrator or cooperative agreements without specific accreditation under the provisions of this subchapter.

disease control and eradication programs of a State.

Veterinarian-in-Charge. The veterinary official of APHIS who is assigned by the Administrator to supervise and perform the official work of APHIS in a State or group of States.

[57 FR 54912, Nov. 23, 1992, as amended at 59 FR 40797, Aug. 10, 1994; 60 FR 39842, Aug. 4, 1995; 62 FR 25445, May 9, 1997]

PART 161—REQUIREMENTS AND STANDARDS FOR ACCREDITED VETERINARIANS AND SUSPENSION OR REVOCATION OF SUCH ACCREDITATION

Sec.

161.1 Statement of purpose; performance of accredited duties in different States.

161.2 Requirements and application procedures for accreditation.

161.3 Standards for accredited veterinarian duties.

161.4 Suspension or revocation of veterinary accreditation; criminal and civil penalties.

AUTHORITY: 15 U.S.C. 1828; 21 U.S.C. 105, 111-114, 114a, 114a-1, 115, 116, 120, 121, 125, 134b, 134f, 612, and 613; 7 CFR 2.22, 2.80, and 371.4, 9701; 7 CFR 2.22, 2.80, and 371.4.

SOURCE: 57 FR 54912, Nov. 23, 1992, unless otherwise noted.

§ 161.1 Statement of purpose; performance of accredited duties in different States.

(a) This subchapter concerns a program administered by APHIS to accredit veterinarians and thereby authorize them to perform, on behalf of APHIS, certain activities specified in this chapter. This program is intended to ensure that an adequate number of qualified veterinarians are available in the United States to perform such activities.

(b) If an accredited veterinarian wishes to perform accredited duties in a State other than the State for which the veterinarian has completed an orientation in accordance with § 161.2(a)(4), the accredited veterinarian shall so inform the Veterinarian-in-Charge of the new State. The Veterinarian-in-Charge of the new State may require the accredited veterinarian to complete, prior to performing any accredited duties in the new State, an

orientation in animal health procedures and issues relevant to the new State. The Veterinarian-in-Charge shall review the content of each such orientation and shall approve its use after determining that it includes adequate information about animal health agencies, regulatory requirements, administrative procedures, and animal disease problems in the new State, to prepare an accredited veterinarian from another State to perform accredited duties in the new State. The Veterinarian-in-Charge shall also give the State Animal Health Official of the new State an opportunity to review the contents of the orientation, and invite him or her to participate in developing orientation materials and conducting the orientation.

(c) An accredited veterinarian may not perform accredited duties in a State in which the accredited veterinarian is not licensed or legally able to practice veterinary medicine.

§ 161.2 Requirements and application procedures for accreditation.

(a) *Initial accreditation.* A veterinarian may apply for accreditation by completing an application for accreditation on Form 1-36A, "Application for Veterinary Accreditation," including certification that the applicant is able to perform the tasks listed in paragraph (d) of this section, and submitting it to the Veterinarian-in-Charge in the State where he or she wishes to perform accredited duties.

(1) Completed Forms 1-36A received by a Veterinarian-in-Charge shall be reviewed by the State Animal Health Official for the State in which the veterinarian wishes to perform accredited duties. Within 14 days after receiving an application, a State Animal Health Official shall either endorse the application or send a written statement to the Administrator explaining why it was not endorsed; but if the State Animal Health Official fails to take one of these actions within 14 days, the Veterinarian-in-Charge shall proceed to review the application. The Administrator will review the application and the written statement, if any, and determine whether the applicant meets the requirements for accreditation contained in this part.

(2) The Administrator is hereby authorized to accredit a veterinarian when he or she determines that:

(i) The veterinarian is a graduate with a Doctorate of Veterinary Medicine or an equivalent degree (any degree that qualifies the holder to be licensed by a State to practice veterinary medicine) from a college of veterinary medicine;

(ii) The veterinarian is licensed or legally able to practice veterinary medicine in the State in which the veterinarian wishes to perform accredited duties. APHIS will confirm licensing status of the applicant by contacting the State board of veterinary medical examiners or any similar State organization that maintains records of veterinarians licensed in a State; and,

(iii) The veterinarian has completed an orientation program approved by the Veterinarian-in-Charge for the State in which the veterinarian wishes to practice, and upon completion of the orientation, has signed a written statement listing the date and place of orientation, the subjects covered in the orientation, and any written materials provided to the veterinarian at the orientation. The Veterinarian-in-Charge shall also give the State Animal Health Official an opportunity to review the contents of the orientation, and invite him or her to participate in developing orientation materials and conducting the orientation. The orientation program shall include the following topics:

(A) Federal animal health laws, regulations, and rules;

(B) Interstate movement requirements for animals;

(C) Import and export requirements for animals;

(D) USDA animal disease eradication and control programs;

(E) Laboratory support in confirming disease diagnoses;

(F) Ethical/Professional responsibilities of an accredited veterinarian; and,

(G) Animal health procedures, issues, and information resources relevant to the State in which the veterinarian wishes to perform accredited duties.

(b) *Reaccreditation.* A veterinarian whose accreditation has been revoked may apply for reaccreditation when the revocation has been in effect for not

less than two years by completing an application for reaccreditation on Form 1-36A, "Application for Veterinary Accreditation", and submitting it to the Veterinarian-in-Charge of the State or area where he or she wishes to perform accredited work.

(1) Completed Forms 1-36A received by a Veterinarian-in-Charge shall be reviewed by the State Animal Health Official for the State in which the veterinarian wishes to perform accredited duties. Within 14 days after receiving an application, a State Animal Health Official shall either endorse the application or send a written statement to the Administrator explaining why it was not endorsed; but if the State Animal Health Official fails to take one of these actions within 14 days, the Veterinarian-in-Charge shall proceed to review the application. The Administrator will review the application and the written statement, if any, and determine whether the applicant meets the requirements for reaccreditation contained in this part.

(2) The Administrator is hereby authorized to reaccredit a veterinarian when he or she determines that:

(i) The veterinarian is licensed or legally able to practice veterinary medicine in the State in which the veterinarian wishes to perform accredited duties;

(ii) The veterinarian has completed a reaccreditation orientation program approved by the Veterinarian-in-Charge for the State in which the veterinarian wishes to practice, and upon completion of the orientation, has signed a written statement listing the date and place of orientation, the subjects covered in the orientation, and any written materials provided to the veterinarian at the orientation. The Veterinarian-in-Charge shall also give the State Animal Health Official an opportunity to review the contents of the reaccreditation orientation, and invite him or her to participate in developing orientation materials and conducting the orientation. The orientation program shall include topics addressing the subject areas which led to loss of accreditation for the applicant, and subject areas which have changed since the applicant lost accreditation; and,

(iii) The professional integrity and reputation of the applicant support a conclusion that the applicant will faithfully fulfill the duties of an accredited veterinarian in the future. In making this conclusion, the Administrator shall review all available information about the applicant, including recommendations of the State Animal Health Official, and shall consider:

(A) Criminal conviction records adversely reflecting on the honesty or integrity of the applicant with regard to the performance or nonperformance of veterinary medical duties;

(B) Official records of the applicant's actions participating in Federal, State, or local veterinary programs;

(C) Judicial determinations in civil litigation adversely reflecting on the integrity of the applicant; and

(D) Any other evidence reflecting on the professional integrity and reputation of the applicant.

(c) *Reinstatement after suspension.* A veterinarian whose accreditation has been suspended for less than 6 months (other than a summary suspension that is changed to a revocation as a result of an adjudicatory proceeding) will be automatically reinstated as an accredited veterinarian upon completion of the suspension. A veterinarian whose accreditation has been suspended for 6 months or more must complete a re-accreditation orientation program in accordance with paragraph (b)(2)(ii) of this section before accreditation will be reinstated.

(d) *Tasks which applicants for accredited status must be able to perform.* Applicants for accredited status must be able to:

(1) Perform physical examinations of individual animals, and visually inspect herds or flocks, to determine whether the animals are free from any clinical signs suggestive of communicable disease;

(2) Recognize the common breeds of livestock so as to be able to record breed information on official documents;

(3) Recognize brucellosis tattoos and calfhood vaccination tags, and determine the state of origin of eartags, to properly identify animals in interstate commerce;

(4) Estimate the age of livestock using a dental formula;

(5) Apply an eartag, tattoo, backtag, and legband;

(6) Certify the disease status of a poultry flock with regard to disease caused by *Salmonella enteritidis*, chlamydiosis and exotic Newcastle disease, by evaluating records of the flock's participation in and testing by Federal and State poultry health programs;

(7) Properly complete certificates for domestic and international movement of animals;

(8) Apply and remove official seals;

(9) Perform a necropsy on livestock;

(10) Recognize clinical signs and lesions of exotic animal diseases;

(11) Plan a disease control strategy for a livestock unit;

(12) Vaccinate for brucellosis and fill out the vaccination certificate;

(13) Draw and ship blood for testing;

(14) Perform a caudal fold test for tuberculosis;

(15) Develop appropriate cleaning and disinfection plans to control communicable livestock disease spread; and

(16) Explain basic principles for control of diseases for which APHIS or APHIS-State cooperative programs exist, such as brucellosis, pseudorabies, and tuberculosis.

(Approved by the Office of Management and Budget under control number 0579-0032)

[57 FR 54912, Nov. 23, 1992, as amended at 61 FR 56891, Nov. 5, 1996]

§ 161.3 Standards for accredited veterinarian duties.

An accredited veterinarian shall perform the functions of an accredited veterinarian only in a State in which the accredited veterinarian is licensed or legally able to practice veterinary medicine. An accredited veterinarian shall perform the functions of an accredited veterinarian and carry out all responsibilities under applicable Federal programs and cooperative programs subject to direction provided by the Veterinarian-in-Charge and in accordance with any regulations and instructions issued to the accredited veterinarian by the Veterinarian-in-Charge, and shall observe the following specific standards:

(a) An accredited veterinarian shall not issue a certificate, form, record or report which reflects the results of any inspection, test, vaccination or treatment performed by him or her with respect to any animal, other than those in regular health maintenance programs, unless he or she has personally inspected that animal within 10 days prior to issuance. Inspections under this paragraph must be conducted in a location that allows the accredited veterinarian sufficient space to observe the animal in such a manner as to detect abnormalities related to areas such as, but not limited to, locomotion, body excretion, respiration, and skin conditions. An accredited veterinarian shall examine such an animal showing abnormalities, in order to determine whether or not there is clinical evidence compatible with the presence or absence of a communicable disease.

(1) Following the first two inspections of a herd or flock as part of a regular health maintenance program, an accredited veterinarian shall not issue a certificate, form, record or report which reflects the results of any inspection, test, vaccination or treatment performed by him or her with respect to any animal in that program, unless he or she has personally inspected that animal within 10 days prior to issuance.

(2) Following the third and subsequent inspections of a herd or flock in a regular health maintenance program, an accredited veterinarian shall not issue a certificate, form, record or report which reflects the results of any inspection, test, vaccination or treatment performed by him or her with respect to any animal in that program, unless he or she has personally inspected that animal within 30 days prior to issuance.

(b) An accredited veterinarian shall not issue, or allow to be used, any certificate, form, record or report, until, and unless, it has been accurately and fully completed, clearly identifying the animals to which it applies, and showing the dates and results of any inspection, test, vaccination, or treatment the accredited veterinarian has conducted, except as provided in paragraph (c) of this section, and the dates of

issuance and expiration of the document. Certificates, forms, records, and reports shall be valid for 30 days following the date of inspection of the animal identified on the document, except that origin health certificates may be valid for a longer period of time as provided in §91.3(a) of this chapter. The accredited veterinarian must distribute copies of certificates, forms, records, and reports according to instructions issued to him or her by the Veterinarian-in-Charge.

(c) An accredited veterinarian shall not issue any certificate, form, record, or report which reflects the results of any inspection, test, vaccination, or treatment performed by another accredited veterinarian, unless:

(1) The signing accredited veterinarian has exercised reasonable care, that is, a standard of care that a reasonably prudent person would use under the circumstances in the course of performing professional duties, to determine that the certificate, form, or report is accurate;

(2) The certificate, form, or report indicates that the inspection, test, vaccination, or treatment was performed by the other accredited veterinarian; identifies the other accredited veterinarian by name; and includes the date and the place where such inspection, test, or vaccination was performed; and,

(3) For a certificate, form, or report indicating results of a laboratory test, the signing accredited veterinarian shall keep a copy of the certificate, form, or report and shall attach to it either a copy of the test results issued by the laboratory, or a written record (including date and participants' names) of a conversation between the signing accredited veterinarian and the laboratory confirming the test results.

(d) An accredited veterinarian shall perform official tests, inspections, treatments, and vaccinations and shall submit specimens to designated laboratories in accordance with Federal and State regulations and instructions issued to the accredited veterinarian by the Veterinarian-in-Charge.

(e) An accredited veterinarian shall identify or be physically present to supervise the identification of reactor

animals by tagging or such other method as may be prescribed in instructions issued to him or her by the Veterinarian-in-Charge or by a State Animal Health Official through the Veterinarian-in-Charge.

(f) An accredited veterinarian shall immediately report to the Veterinarian-in-Charge and the State Animal Health Official all diagnosed or suspected cases of a communicable animal disease for which a APHIS has a control or eradication program in 9 CFR chapter I, and all diagnosed or suspected cases of any animal disease not known to exist in the United States as provided by § 171.3(b) of this chapter.

(g) While performing accredited work, an accredited veterinarian shall take such measures of sanitation as are necessary to prevent the spread of communicable diseases of animals by the accredited veterinarian.

(h) An accredited veterinarian shall keep himself or herself currently informed on Federal and State regulations that are provided to him or her by the Veterinarian-in-Charge, or by a State official through the Veterinarian-in-Charge, governing the movement of animals, and on procedures applicable to disease control and eradication programs, including emergency programs.

(i) An accredited veterinarian shall not use or dispense in any manner, any pharmaceutical, chemical, vaccine or serum, or other biological product authorized for use under any Federal regulation or cooperative disease eradication program, in contravention of applicable Federal or State statutes, regulations, and policies.

(j) An accredited veterinarian shall be responsible for the security and proper use of all official certificates, forms, records, and reports; tags, bands, or other identification devices; and approved digital signature capabilities used in his or her work as an accredited veterinarian and shall take reasonable care to prevent the misuse thereof. An accredited veterinarian shall immediately report to the Veterinarian-in-Charge the loss, theft, or deliberate or accidental misuse of any such certificate, form, record, or report; tag, band, or other identification

device; or approved digital signature capability.

(k) An accredited veterinarian may issue an origin health certificate for export use pursuant to part 91 of this chapter without including test results from a laboratory, if the Veterinarian-in-Charge has determined that such action is necessary to save time in order to meet an exportation schedule and agrees to add the test results to the certificate at a later time. In such cases, the accredited veterinarian shall state on a removable attachment to the certificate that such test results are to be added by the Veterinarian-in-Charge.

[57 FR 54912, Nov. 23, 1992; 58 FR 8820, Feb. 17, 1993; 60 FR 39842, Aug. 4, 1995; 60 FR 55443, Nov. 1, 1995; 62 FR 25445, May 9, 1997; 67 FR 11561, Mar. 15, 2002]

§ 161.4 Suspension or revocation of veterinary accreditation; criminal and civil penalties.

(a) The Administrator is authorized to suspend for a given period of time, or to revoke, the accreditation of a veterinarian when he or she determines that the accredited veterinarian has not complied with the "Standards for Accredited Veterinarian Duties" as set forth in § 161.3 of this part, or, in lieu thereof, to issue a written notice of warning to the accredited veterinarian when the Administrator determines a notice of warning will be adequate to attain compliance with the Standards.

(b) Accreditation shall be automatically terminated when an accredited veterinarian is not licensed or legally able to practice veterinary medicine in at least one State.

(c) Accreditation shall be automatically revoked when an accredited veterinarian is convicted of a crime in either State or Federal court, if such conviction is based on the performance or nonperformance of any act required of the veterinarian in his or her capacity as an accredited veterinarian.

(d) Any accredited veterinarian who knowingly issues or signs a false, incorrect, or mislabeled animal health or inspection certificate, blood sample, official brucellosis vaccination certificate, or official tuberculin test certificate in accordance with this chapter, shall be subject to such civil penalties

Appendix B—VS Area Offices

Alabama

Area Veterinarian-in-Charge
USDA-APHIS-VS
P.O. Box 70429
Montgomery, AL 36107
Phone: (334) 223-7141
Fax: (334) 223-7352

Alaska

Area Veterinarian-in-Charge
USDA-APHIS-VS
2604 12th Court SW., Suite B
Olympia, WA 98502
Phone: (360) 753-9430
Fax: (360) 753-9585

Arizona

Area Veterinarian-in-Charge
USDA-APHIS-VS
1400 E. Southern Ave., Suite 245
Tempe, AZ 85282
Phone: (480) 491-1002
Fax: (480) 491-1895

Arkansas

Area Veterinarian-in-Charge
USDA-APHIS-VS
1200 Cherry Brook Drive, Suite 300
Little Rock, AR 72211
Phone: (501) 224-9515
Fax: (501) 225-5823

California

Area Veterinarian-in-Charge
USDA-APHIS-VS
9580 Micron Ave., Suite E
Sacramento, CA 95827
Phone: (916) 857-6170
Fax: (916) 857-6196

Colorado

Area Veterinarian-in-Charge
USDA-APHIS-VS
755 Parfet St., Suite 136
Lakewood, CO 80215
Phone: (303) 231-5385
Fax: (303) 231-5390

Connecticut

Area Veterinarian-in-Charge
USDA-APHIS-VS
160 Worcester-Providence Road
Sutton Square Plaza, Suite 20
P.O. Box 787
Sutton, MA 01590-9998
Phone: (508) 865-1421
Fax: (508) 865-9317

Delaware

Area Veterinarian-in-Charge
USDA-APHIS-VS
1598 Whitehall Rd., Suite A
Annapolis, MD 21401
Phone: (410) 349-9708
Fax: (301) 261-8113

District of Columbia

Area Veterinarian-in-Charge
USDA-APHIS-VS
1598 Whitehall Rd., Suite A
Annapolis, MD 21401
Phone: (410) 349-9708
Fax: (301) 261-8113

Florida

Area Veterinarian-in-Charge
USDA-APHIS-VS
7022 NW 10th Place
Gainesville, FL 32605
Phone: (352) 333-3120
Fax: (352) 333-6849

Georgia

Area Veterinarian-in-Charge
USDA-APHIS-VS
1498 Klondike Rd., Suite 200
Conyers, GA 30094
Phone: (770) 922-7860
Fax: (770) 483-9000

Hawaii

Area Veterinarian-in-Charge
USDA-APHIS-VS
2604 12th Court SW., Suite B
Olympia, WA 98502
Phone: (360) 753-9430
Fax: (360) 753-9585

Idaho

Area Veterinarian-in-Charge
USDA-APHIS-VS
9158 West Black Eagle Dr.
Boise, ID 83709
Phone: (208) 378-5631
Fax: (208) 378-5637

Illinois

Area Veterinarian-in-Charge
USDA-APHIS-VS
2815 Old Jacksonville Rd., Suite 104
Springfield, IL 62704
Phone: (217) 241-6689
Fax: (217) 241-6695

Indiana

Area Veterinarian-in-Charge
USDA-APHIS-VS
5685 Lafayette Rd., Suite 400
Indianapolis, IN 46254
Phone: (317) 290-3300
Fax: (317) 290-3311

Iowa

Area Veterinarian-in-Charge
USDA-APHIS-VS
Federal Bldg., Rm. 891
210 Walnut St.
Des Moines, IA 50309
Phone: (515) 284-4140
Fax: (515) 284-4156

Kansas

Area Veterinarian-in-Charge
USDA-APHIS-VS
1947 NW. Topeka Blvd., Suite F
Topeka, KS 66608
Phone: (785) 235-2365
Fax: (785) 235-1464

Kentucky

Area Veterinarian-in-Charge
USDA-APHIS-VS
P.O. Box 399
Frankfort, KY 40602
Phone: (502) 227-9651
Fax: (502) 223-7121

Louisiana

Area Veterinarian-in-Charge
USDA-APHIS-VS
5825 Florida Blvd., Rm. 1140
Baton Rouge, LA 70806-9985
Phone: (225) 389-0436
Fax: (225) 389-0524

Maine

Area Veterinarian-in-Charge
USDA-APHIS-VS
160 Worcester-Providence Rd.
Sutton Square Plaza, Suite 20
P.O. Box 787
Sutton, MA 01590-9998
Phone: (508) 865-1421, or 1422
Fax: (508) 865-9317

Maryland

Area Veterinarian-in-Charge
USDA-APHIS-VS
1598 Whitehall Rd., Suite A
Annapolis, MD 21401
Phone: (410) 349-9708
Fax: (301) 261-8113

Massachusetts

Area Veterinarian-in-Charge
USDA-APHIS-VS
160 Worcester-Providence Rd.
Sutton Square Plaza, Suite 20
P.O. Box 787
Sutton, MA 01590-9998
Phone: (508) 865-1421, or 1422
Fax: (508) 865-9317

Michigan

Area Veterinarian-in-Charge
USDA-APHIS-VS
3001 Coolidge Rd., Suite 325
East Lansing, MI 48823
Phone: (517) 324-5290
Fax: (517) 324-5289

Minnesota

Area Veterinarian-in-Charge
USDA-APHIS-VS
251 Starkey Street
Bolander Bldg., Suite 229
St. Paul, MN 55107
Phone: (651) 290-3691
Fax: (651) 228-0654

Mississippi

Area Veterinarian-in-Charge
USDA-APHIS-VS
345 Keyway St.
Flowood, MS 39232
Phone: (601) 965-4307
Fax: (601) 965-5535

Missouri

Area Veterinarian-in-Charge
USDA-APHIS-VS
P.O. Box 104418
Jefferson City, MO 65110-4418
Phone: (573) 636-3116
Fax: (573) 636-4384

Montana

Area Veterinarian-in-Charge
USDA-APHIS-VS
208 North Montana Ave., Suite 101
Helena, MT 59601-3837
Phone: (406) 449-2220
Fax: (406) 449-5439

Nebraska

Area Veterinarian-in-Charge
USDA-APHIS-VS
P.O. Box 81866 (for letters)
5940 S. 58th St. (for packages)
Lincoln, NE 68501
Phone: (402) 434-2300
Fax: (402) 434-2330

Nevada

Area Veterinarian-in-Charge
USDA-APHIS-VS
9580 Micron Ave., Suite E
Sacramento, CA 95827
Phone: (916) 857-6170
Fax: (916) 857-6196

New Hampshire

Area Veterinarian-in-Charge
USDA-APHIS-VS
160 Worcester-Providence Rd.
Sutton Square Plaza, Suite 20
P.O. Box 787
Sutton, MA 01590-9998
Phone: (508) 865-1421, or 1422
Fax: (508) 865-9317

New Jersey

Area Veterinarian-in-Charge
USDA-APHIS-VS
Mercer Corporate Park
320 Corporate Blvd.
Robbinsville, NJ 08691-1598
Phone: (609) 259-8387
Fax: (609) 259-2477

New Mexico

Area Veterinarian-in-Charge
USDA-APHIS-VS
6200 Jefferson St. NE., Suite 117
Albuquerque, NM 87109
Phone: (505) 761-3160
Fax: (505) 761-3176

New York

Area Veterinarian-in-Charge
USDA-APHIS-VS
500 New Karner Rd., 2d Floor
Albany, NY 12205
Phone: (518) 869-9007
Fax: (518) 869-6135

North Carolina

Area Veterinarian-in-Charge
USDA-APHIS-VS
930 Main Campus Dr., Suite 200
Raleigh, NC 27606
Phone: (919) 855-7700
Fax: (919) 855-7720

North Dakota

Area Veterinarian-in-Charge
USDA-APHIS-VS
3509 Miriam Ave., Suite B
Bismarck, ND 58501
Phone: (701) 250-4210 or 4211
Fax: (701) 250-4471

Ohio

Area Veterinarian-in-Charge
USDA-APHIS-VS
12927 Stonecreek Dr.
Pickerington, OH 43147
Phone: (614) 469-5602
Fax: (614) 866-1086

Oklahoma

Area Veterinarian-in-Charge
USDA-APHIS-VS
4020 North Lincoln Blvd., Suite 101
Oklahoma City, OK 73105
Phone: (405) 427-9413
Fax: (405) 427-9451

Oregon

Area Veterinarian-in-Charge
USDA-APHIS-VS
530 Center St. NE., Suite 335
Salem, OR 97301
Phone: (503) 399-5871
Fax: (503) 399-5607

Pennsylvania

Area Veterinarian-in-Charge
USDA-APHIS-VS
2301 N. Cameron St., Rm. 412
Harrisburg, PA 17110
Phone: (717) 782-3442
Fax: (717) 782-4098

Puerto Rico

Area Veterinarian-in-Charge
USDA-APHIS-VS
IBM Building
654 Munoz Rivera Ave., Suite 700
Hato Rey, PR 00918
Phone: (787) 766-6050, 6055, 6060, or 6061
Fax: (787) 766-5159

Rhode Island

Area Veterinarian-in-Charge
USDA-APHIS-VS
160 Worcester-Providence Rd.
Sutton Square Plaza, Suite 20
P.O. Box 787
Sutton, MA 01590-9998
Phone: (508) 865-1421, or 1422
Fax: (508) 865-9317

South Carolina

Area Veterinarian-in-Charge
USDA-APHIS-VS
9600 Two Notch Rd., Suite 10
Columbia, SC 29223
Phone: (803) 788-1919
Fax: (803) 788-2102

South Dakota

Area Veterinarian-in-Charge
USDA-APHIS-VS
314 S. Henry, Suite 100
Pierre, SD 57501-0640
Phone: (605) 224-6186, 6187, or 5943
Fax: (605) 224-8451

Tennessee

Area Veterinarian-in-Charge
USDA-APHIS-VS
P.O. Box 110950
Nashville, TN 37222
(for letters)

Animal Industries Bldg.
Ellington Agriculture Center
440 Hogan Rd., Jennings Bldg., Rm. 206
Nashville, TN 37220
(for packages)

Phone: (615) 781-5310
Fax: (615) 781-53093

Texas

Area Veterinarian-in-Charge
USDA-APHIS-VS
Thornberry Bldg., Rm. 220
903 San Jacinto Blvd.
Austin, TX 78701
Phone: (512) 916-5551 through 5557
Fax: (512) 916-5197

Utah

Area Veterinarian-in-Charge
USDA-APHIS-VS
176 N. 2200 West, Suite 230
Airport Park, Bldg. 4
Salt Lake City, UT 84116
Phone: (801) 524-5010 or 5012
Fax: (801) 524-6898

Vermont

Area Veterinarian-in-Charge
USDA-APHIS-VS
160 Worcester-Providence Rd.
Sutton Square Plaza, Suite 20

P.O. Box 787
Sutton, MA 01590-9998
Phone: (508) 865-1421, or 1422
Fax: (508) 865-9317

Virginia

Area Veterinarian-in-Charge
USDA-APHIS-VS
Federal Building
400 N. 8th Street, Room 726
P.O. Box 10068 (for letters)
Richmond, VA 23240
Phone: (804) 343-2560
Fax: (804) 343-2599

Washington

Area Veterinarian-in-Charge
USDA-APHIS-VS
2604 12th Court SW., Suite B
Olympia, WA 98502
Phone: (360) 753-9430
Fax: (360) 753-9585

West Virginia

Area Veterinarian-in-Charge
USDA-APHIS-VS
12927 Stonecreek Dr.
Pickerington, OH 43147
Phone: (614) 469-5602
Fax: (614) 866-1086

Wisconsin

Area Veterinarian-in-Charge
USDA-APHIS-VS
6510 Schroeder Rd., Suite 2
Madison, WI 53711
Phone: (608) 270-4000
Fax: (608) 270-4001

Wyoming

Area Veterinarian-in-Charge
USDA-APHIS-VS
5353 Yellowstone Rd., Rm. 209
Cheyenne, WY 82009
Phone: (307) 432-7960
Fax: (307) 772-2592

Appendix C—State Animal Health Officials

Alabama

State Veterinarian
Department of Agriculture
P.O. Box 3336
1445 Federal Dr., Rm. 222
Montgomery, AL 36107
Phone: (334) 240-7255
Fax: (334) 223-7352

Alaska

State Veterinarian
Division of Animal Health
Department of Environment Conservation
550 S. Alaska St., Suite 6
Palmer, AK 99645
Phone: (907) 745-3236
Fax: (907) 745-8125

Arizona

State Veterinarian
Arizona Department of Agriculture
1688 West Adams, 3d Floor
Phoenix, AZ 85007
Phone: (602) 542-4293
Fax: (602) 542-4290

Arkansas

State Veterinarian
Arkansas Department of Agriculture
P.O. Box 8505
Number 1 Natural Resources Dr.
Little Rock, AR 72215
Phone: (501) 907-2400
Fax: (501) 907-2425

California

State Veterinarian
Department of Food and Agriculture
1220 N St., Rm. A114
Sacramento, CA 95814
Phone: (916) 654-0881
Fax: (916) 653-4249

Colorado

State Veterinarian
Department of Agriculture
700 Kipling St., Suite 4000
Lakewood, CO 80212-5894
Phone: (303) 239-4161
Fax: (303) 239-4164

Connecticut

State Veterinarian
Department of Agriculture
165 Capital Ave.
Hartford, CT 06106
Phone: (860) 713-2505
Fax: (860) 713-2515

Delaware

State Veterinarian
Department of Agriculture
2320 S. Dupont Highway
Dover, DE 19901-5515
Phone: (302) 739-4811
Fax: (302) 697-4451

Florida

State Veterinarian
Department of Agriculture and Consumer Services
Division of Animal Industry, Room 330
407 S. Calhoun St.
Room 330, Mayo Bldg.
Tallahassee, FL 32399-0800
Phone: (850) 410-0900
Fax: (850) 410-0957

Georgia

State Veterinarian
Department of Agriculture
19 Martin Luther King, Jr., Dr.
Capital Square, Rm. 106
Atlanta, GA 30334-4201
Phone: (404) 656-3671
Fax: (404) 657-1357

Hawaii

State Veterinarian
Department of Agriculture
Division of Animal Industry
99-941 Halawa Valley Street
Aiea, HI 96701-5669
Phone: (808) 483-7111
Fax: (808) 483-7110

Idaho

State Veterinarian
Department of Agriculture
Division of Animal Industries
P.O. Box 7249
Boise, ID 83707-9985
Phone: (208) 332-8540
Fax: (208) 334-4062

Illinois

State Veterinarian
Department of Agriculture
P.O. Box 19281—State Fairgrounds
Springfield, IL 62794-9281
Phone: (217) 782-4944
Fax: (217) 524-7702 or (217) 558-6033

Indiana

State Veterinarian
Department of Agriculture
805 Beachway Dr., Suite 50
Indianapolis, IN 46224
Phone (317) 227-0300
Fax: (317) 227-0330

Iowa

State Veterinarian
Department of Agriculture
Henry Wallace Building, 2d Floor
502 E. 9th St.
Des Moines, IA 50319
Phone: (515) 281-5305
Fax: (515) 281-4282

Kansas

State Veterinarian
Animal Health Department
708 S. Jackson
Topeka, KS 66603-3714
Phone: (785) 296-2326
Fax: (785) 296-1765

Kentucky

State Veterinarian
Department of Agriculture
Division of Livestock Sanitation
100 Fair Oaks Lane, Suite 252
Frankfort, KY 40601
Phone: (502) 564-3956
Fax: (502) 564-7852

Louisiana

State Veterinarian
Department of Agriculture
P.O. Box 1951
Baton Rouge, LA 70821-1951
Phone: (225) 925-3980
Fax: (225) 925-4103

Maine

State Veterinarian
Department of Agriculture
28 State House Station
Augusta, ME 04333-0028
Phone: (207) 287-3701
Fax: (207) 624-5044

Maryland

State Veterinarian
Department of Agriculture
Animal Health Section
50 Harry S Truman Parkway
Annapolis, MD 21401
Phone: (410) 841-5810
Fax: (410) 841-5999

Massachusetts

State Veterinarian
Department of Agriculture
Bureau of Animal Health
251 Causeway St., Suite 500
Boston, MA 02114-2151
Phone: (617) 626-1790
Fax: (617) 626-1850

Michigan

State Veterinarian
Department of Agriculture
P.O. Box 30017
Lansing, MI 48909
Phone: (517) 373-1077
Fax: (517) 373-6015

Minnesota

State Veterinarian
119 Agriculture Building

90 W. Plato Blvd.
St. Paul, MN 55107
Phone: (651) 296-2942
Fax: (651) 296-7417

Mississippi

State Veterinarian
Department of Agriculture
P.O. Box 3889
121 N. Jefferson St. (Zip code is 39201 at building address.)
Jackson, MS 39207
Phone: (601) 359-1170
Fax: (601) 359-1177

Missouri

State Veterinarian
1616 Missouri Blvd.
P.O. Box 630
Jefferson City, MO 65102-0630
Phone: (573) 751-3377
Fax: (573) 751-6919

Montana

State Veterinarian
Department of Livestock
P.O. Box 202001
Capitol Station, 6th & Roberts
Helena, MT 59620-2001
Phone: (406) 444-2043
Fax: (406) 444-1929

Nebraska

State Veterinarian
Department of Agriculture—Bureau of Animal Industry
P.O. Box 94787
301 Centennial Mall, South, 4th Floor
Lincoln, NE 68509-4787
Phone: (402) 471-2351
Fax: (402) 471-6893

Nevada

State Veterinarian
Department of Agriculture
Bureau of Animal Industry
350 Capitol Hill Ave.
Reno, NV 89502-2992
Phone: (775) 688-1180
Fax: (775) 688-1178

New Hampshire

State Veterinarian
Department of Agriculture
P.O. Box 2042
25 Capitol Street, 2d Floor State House
Concord, NH 03302-2042
Phone: (603) 271-2404
Fax: (603) 271-1109

New Jersey

State Veterinarian
Department of Agriculture
P.O. Box 330
Trenton, NJ 08625
Phone: (609) 292-3965
Fax: (609) 777-8395

New Mexico

State Veterinarian
Livestock Board
300 San Mateo Blvd., NE., Suite 1000
Albuquerque, NM 87108-1500
Phone: (505) 841-6161
Fax: (505) 841-6160

New York

State Veterinarian
Division of Animal Industry
New York State Department Agriculture and Markets
10B Airline Dr.
Albany, NY 12235
Phone: (518) 457-3502
Fax: (518) 485-7773

North Carolina

State Veterinarian
Department of Agriculture
1030 Mail Service Center
Raleigh, NC 27699-1030
Phone: (919) 733-7601
Fax: (919) 733-6431

North Dakota

State Veterinarian
Department of Agriculture
600 East Blvd., Dept. 602
Bismarck, ND 58505
Phone: (701) 328-2655
Fax: (701) 328-4567

Ohio

State Veterinarian
Department of Agriculture
8995 E. Main St., Bldg. 6
Reynoldsburg, OH 43068
Phone: (614) 728-6220
Fax: (614) 728-6310

Oklahoma

State Veterinarian
Department of Agriculture
2800 N. Lincoln Blvd.
Oklahoma City, OK 73105
Phone: (405) 522-6131
Fax: (405) 522-0756

Oregon

State Veterinarian
Department of Agriculture
635 Capitol Street NE.
Salem, OR 97301-2532
Phone: (503) 986-4680
Fax: (503) 986-4734

Pennsylvania

State Veterinarian
Department of Agriculture
2301 N. Cameron St.
Harrisburg, PA 17110-9408
Phone: (717) 772-2852
Fax: (717) 787-1868

Puerto Rico

State Veterinarian
Commonwealth of Puerto Rico
Box 10163
Santurce, PR 00908
Phone: (787) 796-1650
Fax: (787) 796-5873

Rhode Island

State Veterinarian
Department of Agriculture
235 Promenade Street
Providence, RI 02908-5767
Phone: (401) 222-2781
Fax: (401) 222-6047

South Carolina

State Veterinarian
Clemson University
Livestock/Poultry Health Division
P.O. Box 102406
Columbia, SC 29224-2406
Phone: (803) 788-2260
Fax: (803) 788-8058

South Dakota

State Veterinarian
Animal Industry Board
411 S. Fort St.
Pierre, SD 57501
Phone: (605) 773-3321
Fax: (605) 773-5459

Tennessee

State Veterinarian
Ellington Agriculture Center
P.O. Box 40627, Melrose Station
Nashville, TN 37204
Phone: (615) 837-5120
Fax: (615) 837-5250

Texas

State Veterinarian
Texas Animal Health Commission
P.O. Box 12966
Austin, TX 78711-2906
Phone: (512) 719-0700
Fax: (512) 719-0719

U.S. Virgin Islands

State Veterinarian
Government of U.S. Virgin Islands
Rural Route 1, Box 10345
Kingshill, St.Croix, USVI 00850-9722
Phone: (340) 778-0991
Fax: (340) 778-7977

Utah

State Veterinarian
Department of Agriculture
350 N. Redwood Rd., Box 146500
Salt Lake City, UT 84114-6500
Phone: (801) 538-7160
Fax: (801) 538-7169

Vermont

State Veterinarian
Department of Agriculture
116 State Street, Drawer 20
Montpelier, VT 05620-2901
Phone: (802) 828-2416
Fax: (802) 828-3831

Virginia

State Veterinarian
Department of Agriculture
Washington Bldg.
1100 Bank St., Suite 101
Richmond, VA 23219
Phone: (804) 786-2483
Fax: (804) 225-2666

Washington

State Veterinarian
Food Safety/Animal Health Division
1111 Washington St., P.O. Box 42577
Olympia, WA 98504-2560
Phone: (360) 902-1800
Fax: (360) 902-2087

West Virginia

State Veterinarian
Department of Agriculture
State Capitol Bldg.
1900 Kanawha Blvd., East
Charleston, WV 25305-0172
Phone: (304) 558-2214
Fax: (304) 558-2231

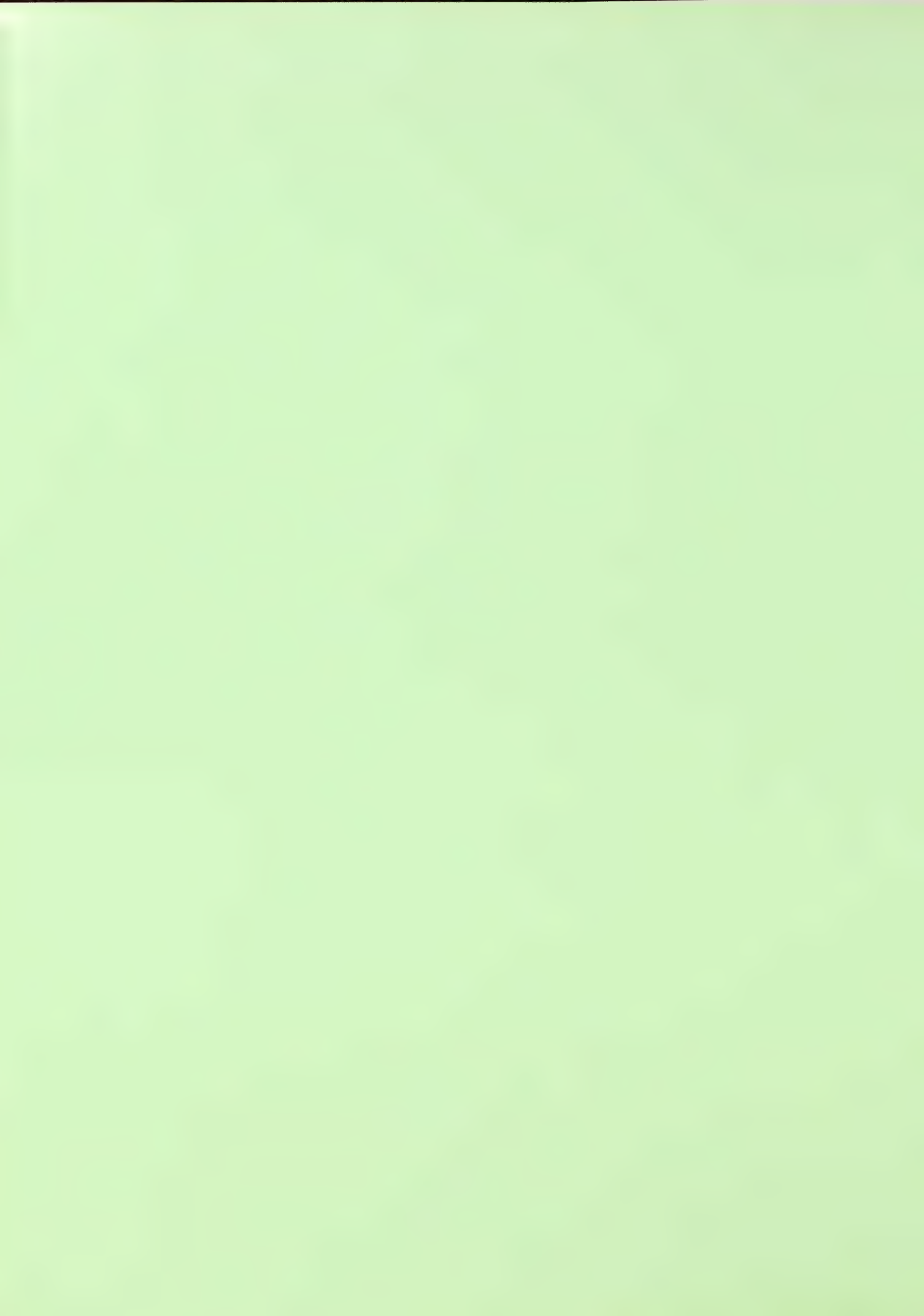
Wisconsin

State Veterinarian
Department of Agriculture
P.O. Box 8911
Madison WI 53708-8911
Phone: (608) 224-4872
Fax: (608) 224-4871

Wyoming

State Veterinarian
Livestock Board
2020 Carey Ave., 4th Floor
Cheyenne, WY 82002
Phone: (307) 777-6443
Fax: (307) 777-6561

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Appendix D—

Forms and Instructions for Completing Them

VS Form 1-27, Permit for Movement of Animals

VS Form 4-24, Brucellosis [Calfhood] Vaccination Record

VS Form 4-26, Vaccination Record

VS Form 4-33, Brucellosis Test Record

VS Form 4-54, Brucellosis Test Record, Market Cattle Testing Program

VS Form 6-22, Tuberculosis Test Record

VS Form 10-4, Specimen Submission

VS Form 10-11, Equine Infectious Anemia Laboratory Test

VS Form 10-12, Equine Infectious Anemia Supplemental Investigation

VS Form 10-13, Owner Shipper Certificate

VS Form 10-13A, Owner Shipper Certificate Continuation Sheet

VS Form 17-6, Certificate for Poultry or Hatching Eggs for Export

VS Form 17-140, U.S. Origin Health Certificate

VS Form 17-140A, U.S. Origin Health Certificate, Continuation Sheet

U.S. Origin Health Certificate for the Export of Horses From the United States to Canada

APHIS Form 7001, U.S. Interstate and International Certificate of Health Examination for Small Animals

VS Form 1-27: Permit for Movement of Animals

1. Complete name and mailing address. If animals are being reconsigned from a market has purchased the animals and is, in fact, the owner/shipper.
2. Complete name and address of the owner at the time the physical condition was diagnosed. May be the same as item 1.
3. Self-explanatory.
4. This should be the complete name and address of a slaughter establishment or a quarantined feedlot. If the permit is for eggs, this will be the address of the breaking establishment.
5. Self-explanatory.
6. Self-explanatory.
7. Write in "other" if for eggs.
8. State disease suspected or diagnosed.
9. Exposed, suspect, infected.
10. Infected, exposed, suspect, etc. Use "N/A" if animals are a combined lot being reconsigned from a market.
11. Status of the geographic area as it applies to the disease involved (e.g., quarantine, free, etc.).
12. If poultry products, write in the number of cases, boxes, crates, etc.
13. Self-explanatory.
14. Self-explanatory.
15. Record the seal number used. Seals are not used on poultry trucks but are used on eggs whose movement is restricted because of Salmonella enteritidis.
16. Mark appropriate box. Check with your State Veterinarian or Area Veterinarian-in-Charge if in doubt.
17. a. Record all permanent identification present.
b. Use breed codes.
c. M = male, F = female, N = neutered.
If the animal has a current permit number, list the identification number from the original permit that authorized movement to the current location. List any nonpermanent identification (e.g., sale tags, backtags, bangle tags, etc.). Identify poultry by strain. Identify poultry products by type, (e.g., eggs, manure, etc.).
18. This is a legal document; do not forget to sign it.
19. Self-explanatory.
20. Self-explanatory.
21. Allow a reasonable amount of time for the movement to take place.
22. Allow a reasonable amount of time for the movement to take place.
23. If the owner or shipper is not available, the trucker may sign. Never allow a member of the market organization to sign unless the market is the buyer or shipper.
24. Mark appropriate box. If the trucker signed, write in "trucker."
25. Self-explanatory.
- 26-29. Self-explanatory. For slaughter animals and poultry, if the inspector cannot certify as to receipt and slaughter from his or her personal knowledge, and if plant management satisfies the inspector that the animals or poultry have, in fact, been handled properly, the inspector can insert above item 28 the phrase "Plant Records" or "Plant Management" and then sign item 33 and date item 34.
For animals shipped to a quarantined feedlot, whenever the inspector cannot verify arrival through direct inspection and count, he or she can insert above item 28 the phrase "animals on hand," or "quarantined feedlot records," etc., and then sign item 33 and date item 34.
For swine shipped from slaughter market to slaughter market, the inspector must verify arrival of all permitted swine by direct inspection and count.
30. Must be completed if the "yes" box in item 16 is marked.
31. Must be completed if the "yes" box in item 16 is marked.
After completion of the form, items 1-25, the white copy accompanies the shipment. If the shipment is for slaughter, the green copy is addressed to the USDA-Food Safety and Inspection Service (FSIS) or State inspector at the designated slaughtering establishment. The FSIS or the State inspector will then complete the form and return it to the State of origin. If the shipment is poultry products, the green copy goes to the USDA-Agricultural Marketing Service inspector located at the destination. The pink copy goes to the APHIS Veterinary Services area office in the State of destination. The yellow copy goes to the APHIS Veterinary Services area office in the State of origin. The issuing official keeps the goldenrod copy.

This permit identifies restricted animals moved for quarantine/slaughter purposes. The information is needed to identify disease infected, exposed animals that are moved to specific locations in order to control and prevent spread of the disease (9 CFR 71 through 85).

See reverse side for additional information

U.S. DEPARTMENT OF AGRICULTURE ANIMAL AND PLANT HEALTH INSPECTION SERVICE VETERINARY SERVICES PERMIT FOR MOVEMENT OF RESTRICTED ANIMALS USE A SEPARATE FORM FOR EACH SPECIES		FORM APPROVED OMB NO 0579-0051 No. E				
1. NAME AND ADDRESS OF SHIPPER OR CONSIGNOR (Include Zip Code) 		5. STATE WHERE ISSUED 				
2. CONSIGNEE (Destination Name and Address include Zip Code) 		6. MOVEMENT TO BE ☐ INTERSTATE ☐ INTRASTATE				
3. MOVED FROM (Name and Location of Premise if other than item 1 above) 		7. MOVEMENT FOR ☐ QUARANTINE ☐ SLAUGHTER				
4. NAME AND ADDRESS OF OWNER AT TIME CONDITION DIAGNOSED 		8. DISEASE 				
		9. STATUS OF ANIMALS <table border="1"> <tr> <td>No Reactor</td> <td>No. Exposed</td> <td>No Other (Specify)</td> </tr> </table>		No Reactor	No. Exposed	No Other (Specify)
No Reactor	No. Exposed	No Other (Specify)				
		10. STATUS OF HERD OF ORIGIN 				
		11. STATUS OF AREA OF ORIGIN 				
		12. NO. ANIMALS IN THIS SHIPMENT 				
		13. SPECIES (One only) 				
		14. TRANSPORTATION VEHICLE LICENSE NO. OR OTHER IDENTIFICATION NO. 				
		15. SEAL NO. 				
		16. VEHICLE REQUIRED TO BE CLEANED AND DISINFECTED AT DESTINATION ☐ YES ☐ NO (If Yes, Items 32, 33, and 34 are Applicable)				
VALID ONLY FOR ABOVE DESTINATION						

[illegible]

I certify that I have inspected the animals described on this permit and find them eligible to move in accordance with the requirements of State and Federal regulations

18. SIGNATURE OF INSPECTOR	19. DATE ISSUED	20. TIME ISSUED	VOID AFTER	
			21. DATE	22. TIME

WARNING TO OWNER, SHIPPER AND TRUCKER - LIVESTOCK MUST BE DELIVERED TO CONSIGNEE WITHOUT DIVERSION

I understand that it is a violation of Federal law to move the animals identified herein interstate except in accordance with the provisions of applicable Federal Regulations. I also understand that such animals must comply with existing state laws and regulations governing movement of livestock and poultry. I have arranged or will arrange for a copy of this permit to accompany the interstate shipment and be delivered with the above described animals.

23. SIGNATURE OF OWNER OF SHIPPER	24. TITLE ☐ OWNER ☐ SHIPPER	25. DATE SIGNED
-----------------------------------	--	-----------------

I certify that the animals described on this permit were received and slaughtered/quarantined in accordance with the requirements of the State and Federal regulations on the date indicated in item 29

26. PLACE ANIMALS RECEIVED		27. DATE ANIMALS ARRIVED		28. NO. ANIMALS RECEIVED		29. DATE SLAUGHTERED QUARANTINED	
30. DATE AND TIME SEALS BROKE		31. AUTHORIZED SIGNATURE		32. DATE CLEANED AND DISINFECTED (if required)		33. SIGNATURE OF INSPECTOR	
						34. DATE SIGNED	

OF

OF VS FORM 1-27

3 MOVED FROM (Name and Location of Premise if other than item 1)

4 NAME AND ADDRESS OF OWNER AT TIME CONDITION DIAGNOSED

VALID ONLY FOR ABOVE DESTINATION

ANIMALS TO BE MOVED

[illegible]

Attach to VS Form 1-27

16-4

[This page intentionally left blank]

VS Form 4–24: Brucellosis [Calfhood] Vaccination Record

STATE, COUNTY, AND CODE

Enter the complete State and county name. Use the Federal Information Processing Standards code for the county.

HERD NUMBER, OWNER NUMBER

Herd and owner numbers are assigned by the State. You may or may not have them when you complete the form.

KIND OF HERD

Mark the appropriate box.

REMARKS, WBBS

[Leave blank.]

HERD OWNER

Enter the complete name and mailing address of the owner.

CV, AV

Mark whether this is a calfhood vaccination or adult vaccination.

LOCATION

Use the appropriate codes for these items. Check with your State or Veterinary Services area office.

VACCINE USED

Enter the name of the biological supply company producing the vaccine used.

EXPIRATION DATE

Enter the expiration date of the vaccine.

SERIAL NUMBER

Enter the serial number of the vaccine.

DOSAGE

Mark the appropriate box.

VACC. TATTOO

Enter the vaccination tattoo used. See “Brucellosis Eradication: Uniform Methods and Rules” to determine the proper tattoo.

CERTIFICATION FOR PAYMENT

Mark the appropriate box.

SIGNATURE

This is a legal document; be sure to sign it.

DATE OF VACCINATION

Enter the date that the vaccination was performed.

AGREE. CODE

Enter your agreement code provided by the State.

CERTIFICATION OF OWNER OR WITNESS

Have the owner or a witness sign and date the form.

CERTIFICATION FOR RE-ESTABLISHING VACCINATION STATUS

Mark this block if calfhood vaccinates are being retagged; sign and date. Retagging is always done at the owner's expense.

IDENTIFICATION NUMBER

Enter the calfhood vaccination tag number from the eartag that you are applying. Note any other permanent identification numbers, if present.

AGE (MO.)

List the age in months.

BREED

Use the breed codes listed in table 3.

SEX

Enter F. (The only official calfhood vaccinates are female.)

P/B-GRADE

Mark this block if the animals are purebred (registered) or grade calves.

TATTOO

List the present tattoo if retagging.

STATE	
COUNTY	CODE

ALL VACCINATIONS MUST BE PROMPTLY REPORTED
COOPERATIVE STATE-FEDERAL BRUCELLOSIS ERADICATION PROGRAM **G**
BRUCELLOSIS VACCINATION
RECORD

U.S. DEPARTMENT OF AGRICULTURE
 ANIMAL AND PLANT HEALTH INSPECTION SERVICE
 VETERINARY SERVICES

HERD NUMBER	HERD OWNER LAST	FIRST	INITIAL	VACCINE USED	EXPIRATION DATE
OWNER NUMBER	ROUTE-STREET-ROAD			SERIAL NUMBER	DOSAGE ☐ FULL ☐ REDUCED
KIND OF HERD ☐ DAIRY ☐ BEEF ☐ MIXED	POST OFFICE	STATE	ZIP CODE	CERTIFICATION FOR PAYMENT	
REMARKS	WBBS	CV	AV	RGE	TWP
		☐	☐		
				SEC	DISTRICT
					FARM UNIT

☐ FEDERAL EMPLOYEE ☐ FEE BASIS (Federal) ☐ STATE COUNTY ☐ PRIVATE (Owner's Expense)

I CERTIFY THAT: (1) I have vaccinated with Strain 19, tattooed and eartagged or otherwise properly identified all animals listed hereon as prescribed by the Brucellosis UM & R. and recorded all information as prescribed by State regulations. (2) when payment is claimed at program expense in accordance with agreement number below no payment has been or will be received from any other source.

NO	IDENTIFICATION NUMBER	AGE (MO YR)	BREED	SEX	P.B.-GRADE	* TATTOO
1						
2						
3						
4						
5						
6						
7						
8						

Signature	Date of Vaccination	Agree. Code
-----------	---------------------	-------------

CERTIFICATION OF OWNER OR WITNESS
 I CERTIFY THAT the animals listed hereon were vaccinated and identified for the above named owner.

Signature	Date
-----------	------

CERTIFICATION FOR RE-ESTABLISHING VACCINATION STATUS

* ☐ indicate tattoo of animals previously vaccinated in appropriate column,
 I CERTIFY THAT I have personally examined the animal(s) noted hereon, and have read the official tattoo(s) and have retagged them as shown.

Signature	Date
-----------	------

VS Form 4–26: Brucellosis Vaccination Record

STATE, COUNTY, AND CODE

Enter the complete State and county name. Use the Federal Information Processing Standards code for the county.

HERD NUMBER, OWNER NUMBER

Herd and owner numbers are assigned by the State. You may or may not have them when you complete the form.

KIND OF HERD

Mark the appropriate box.

REMARKS, WBBS

[Leave blank.]

HERD OWNER

Enter the complete name and mailing address of the owner.

CV, AV

Mark whether this is a calfhooed vaccination or adult vaccination.

LOCATION

Use the appropriate codes for these items. Check with your State or Veterinary Services area office.

VACCINE USED

Enter the name of the biological supply company producing the vaccine used.

EXPIRATION DATE

Enter the expiration date of the vaccine.

SERIAL NUMBER

Enter the serial number of the vaccine.

DOSAGE

Mark the appropriate box.

VACC. TATTOO

Enter the vaccination tattoo used. See “Brucellosis Eradication: Uniform Methods and Rules” to determine the proper tattoo.

CERTIFICATION FOR PAYMENT

Mark the appropriate box.

SIGNATURE

This is a legal document; be sure to sign it.

DATE OF VACCINATION

Enter the date that the vaccination was performed.

AGREE. CODE

Enter your agreement code provided by the State.

CERTIFICATION OF OWNER OR WITNESS

Have the owner or a witness sign and date the form.

CERTIFICATION FOR RE-ESTABLISHING VACCINATION STATUS

Mark this block if calfhooed vaccinates are being retagged; sign and date. Retagging is always done at the owner’s expense.

IDENTIFICATION NUMBER

Enter the calfhooed vaccination tag number from the eartag that you are applying. Note any other permanent identification numbers, if present.

AGE (MO.)

List the age in months.

BREED

Use the breed codes listed in table 3.

SEX

Enter F.

P/B-GRADE

Mark this block if the animals are purebred (registered) or grade calves.

TATTOO

List the present tattoo if retagging.

ALL VACCINATIONS MUST BE PROMPTLY REPORTED

COOPERATIVE STATE-FEDERAL BRUCELLOSIS ERADICATION PROGRAM

W

BRUCELLOSIS VACCINATION RECORD

STATE																					
COUNTY		CODE																			
HERD NUMBER		HERD OWNER LAST			FIRST			INITIAL			VACCINE USED		EXPIRATION DATE								
OWNER NUMBER		ROUTE STREET ROAD										SERIAL NUMBER		DOSAGE ☐ Full ☐ Reduced		VACC TATTOO					
KIND OF HERD ☐ DAIRY ☐ BEEF ☐ MIXED		POST OFFICE			STATE			ZIP CODE			CERTIFICATION FOR PAYMENT ☐ FEDERAL EMPLOYEE ☐ FEE BASIS 'Federal' ☐ STATE COUNTY ☐ PRIVATE (Owner's Expense)										
REMARKS		WBS		CV AV ☐ ☐		RGE		TWP		SEC		DISTRICT		FARM UNIT		I CERTIFY THAT (1) I have vaccinated with Strain 19, tattooed and eartagged or otherwise properly identified all animals listed hereon as prescribed by the Brucellosis UM & R, and recorded all information as prescribed by State regulations, (2) when payment is claimed at program expense in accordance with agreement number below no payment has been or will be received from any other source. Signature _____ Date of Vaccination _____ Agree. Code _____ CERTIFICATION OF OWNER OR WITNESS I CERTIFY THAT the animals listed hereon were vaccinated and identified for the above named owner. Signature _____ Date _____ CERTIFICATION FOR RE-ESTABLISHING VACCINATION STATUS * ☐ indicate tattoo of animals previously vaccinated in appropriate column. I CERTIFY THAT I have personally examined the animal(s) noted hereon, and have read the official tattoo(s) and have retagged them as shown. Signature _____ Date _____					
0 Z IDENTIFICATION NUMBER		AGE Yr. (s) Mo. (s)		BREED		SEX		P/B GRADE		* TATTOO											
1																					
2																					
3																					
4																					
5																					
6																					
7																					
8																					
9																					
10																					
11																					
12																					
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15																					
16																					
17																					
18																					
19																					
20																					
21																					
22																					

VS Form 4-33: Brucellosis Test Record

STATE, COUNTY

Enter the location of the herd; it may not be the same as the owner's residence.

CODE

Enter the correct county code. A list of the Federal Information Processing Standards county codes for your State may be obtained from your nearest Veterinary Services area office. If you do not know the correct code, leave the block blank.

HERD OWNER

Enter last name, first name, middle initial, and complete mailing address. Be consistent among tests — for example, James Jones v. J. Jones v. Jones Bros.

LOCATION CODES

Enter the location codes if appropriate and/or known. Check with the Veterinary Services area office for specific information.

REASON FOR TEST

Indicate whether this is the initial test or a retest. If you check the retest block, enter that test date in the **PREVIOUS TEST DATE** block. The vet code is assigned by your State. This information may be preprinted on the form. Indicate the reason for the test (e.g., export). If none of the first 9 reasons apply, check item 10, **Other**, and briefly explain in the **REMARKS** block.

COMPLETE HERD TEST OF ALL ELIGIBLE ANIMALS

Check either Yes or No to indicate whether this test is a complete herd test (all eligible animals are being tested). Enter the number of eligible animals in the herd.

KIND OF HERD

Enter the type of herd-dairy, beef, or mixed, or swine, or other (e.g., caprine).

AGREE. CODE

Certification for payment may be fee-basis or private, depending on the State. Your agreement code is assigned by your State.

SIGNATURE

Sign the form and provide your address. Remember, this is a legal document; be sure to sign it. Provide the complete address, including ZIP Code. (The date should be the date the animal was bled.)

TUBE NO.

Follow instructions from the laboratory you use on how to number the tubes.

SIGNATURE

This is a legal document; be sure to sign it.

DATE OF VACCINATION

Enter the date that the vaccination was performed.

AGREE. CODE

Enter your agreement code provided by the State.

CERTIFICATION OF OWNER OR WITNESS

Have the owner or a witness sign and date the form.

CERTIFICATION FOR RE-ESTABLISHING VACCINATION STATUS

Mark this block if calfhood vaccinates are being retagged; sign and date. Retagging is always done at the owner's expense.

IDENTIFICATION NUMBER

Enter the vaccination tag number from the eartag that you are applying. Note any other permanent identification numbers, if present.

AGE (MO.) List the age in months.

BREED Use the breed codes listed in table 3.

SEX Enter F.

P/B-GRADE

Mark this block if the animals are purebred (registered) or grade calves.

TATTOO List the present tattoo if retagging.

Using VS Form 4–33 for Swine with Pseudorabies

Check first with the State office in the State where the swine are located to be sure that the State does not have its own official pseudorabies test form. If there is an official State form, use it. Otherwise, alter VS Form 4–33 as follows:

1. At the top of the form, delete **BRUCELLOSIS** and print **PSEUDORABIES**. Also print **PSEUDORABIES** in the **REMARKS** block.
2. When testing for the Cooperative State–Federal– Industry Pseudorabies Eradication Program, if you check block 6, 8, or 9, you must also do the following:
 - If block 6 is checked, enter one of the following in the **REMARKS** block:
 - Feeder-pig monitoring
 - Qualified-negative (QN) herd test
 - QN-vaccinated herd test
 - Retest of infected herds
 - Retest of imported swine
 - Gene-altered vaccinated herd test
 - Other
 - If block 8 is checked, enter one of the following in the **REMARKS** block:
 - Breeding herd
 - Grower/finisher herd
 - Farrow to finish
 - If block 9 is checked, enter one of the following in the **REMARKS** block:
 - Tracing movements of infected herds
 - Tracing source of additions to infected herds
 - Circle-testing around infected herds
 - [Explanation for any other epidemiologic reason]
3. Permanent identification includes official eartag, tattoo, and ear notching.
4. If the herd that you are testing is vaccinated, use the **REMARKS** block to list the type and brand name of vaccine used.

ALL INCOMPLETE RECORDS WILL BE RETURNED FOR COMPLETION

COOPERATIVE STATE-FEDERAL BRUCELLOSIS ERADICATION PROGRAM **L**
BRUCELLOSIS TEST RECORD

STATE		COUNTY		CODE																	
HERD NUMBER		HERD OWNER		LAST		FIRST		INITIAL		PREVIOUS TEST DATE		VET CODE		TOTAL		REA		SUS			
OWNER NUMBER		ROUTE-STREET-ROAD																			
TEST		PROG		WBBS		POST OFFICE		STATE		ZIP CODE		CERTIFICATION FOR PAYMENT ☐ FEDERAL EMPLOYEE ☐ FEE BASIS (Federal) ☐ STATE COUNTY ☐ PRIVATE (Owner's Expense) <i>I certify</i> That I have drawn blood samples from each animal identified below and have correctly listed each tube number with complete corresponding identification number; all numbers and letters of all eartags have been listed; cattle with existing official eartags have not been retagged, and when payment is claimed at program expense in accordance with agreement number below, no payment has been or will be received from any other source.									
REASON FOR TEST						☐ INITIAL ☐ RE-TEST		RGE		TWP		SEC		DISTRICT		FARM UNIT					
Slaughter Rea		1		Hd Cert / Validation		6		COMPLETE HERD TEST OF ALL ELIGIBLE ANIMALS ☐ YES ☐ NO NO IN HERD KIND OF HERD ☐ DAIRY ☐ BEEF ☐ MIXED ☐ SWINE ☐ OTHER (Specify below)								SUMMARY					
Lvat Mkt. Rea		2		Post Move Quar & Test		7										NEGATIVE				SIGNATURE	
Susp Ring Test		3		Area Test		8		SUSPECT				ROUTE STREET ROAD		DATE BLED							
Diagnostic		4		Epidemiology		9		REACTOR				POST OFFICE		STATE		ZIP CODE		FIELD TEST DONE BY			
Pvt Sale		5		Other (Specify below)		10		TOTAL				REACTORS TAGGED AND BRANDED DATE		SIGNATURE		AGREE CODE					
REMARKS						LABORATORY		PLACE		DATE											
DATE LISTED						BY															

TUBE NO	2	RECORD ALL IDENTIFICATION NUMBER(S)	VACC TATTOO	AGE	BREED	SEX	FLD T	LABORATORY RESULTS						TEST In-terd	REMARKS AND ADDITIONAL INFORMATION	REACTOR TAG NUMBER
								BAPA RST	CARD	STT SPT	RIV	CF				
		1														
		2														
		3														
		4														
		5														
		6														
		7														
		8														
		9														
		10														
		11														
		12														
		13														
		14														
		15														

RT - Retag AB - Aborter NA - Natural Addition PA - Purchased Addition	Record ALL Eartag(s) and Tattoo(s)	Record ALL Legible Characters	FIELD TEST CODE N - Negative P - Positive	TEST INTERPRETATION N - Negative Classified by: S - Suspect R - Reactor Date Classified	TEST AUTHORIZATION EXPIRES
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VS FORM 4-33
(FEB 92)

Replaces edition date of (4/81), which may be used.

PART 1 - OFFICE

U.S. DEPARTMENT OF AGRICULTURE ANIMAL AND PLANT HEALTH INSPECTION SERVICE VETERINARY SERVICES										BRUCELLOSIS TEST RECORD - CONTINUATION SHEET										HERD NUMBER		PAGE NO		
Complete all entries on VS Form 4-33 before using this form																								
HERD OWNER - LAST					FIRST					INITIAL					DATE BLED					VETERINARIAN				
TUBE NO.	2	RECORD ALL IDENTIFICATION NUMBERS	VACC TATTOO	AGE	BREED	SEX	FLD T	LABORATORY RESULTS						TEST IN-TERP.	REMARKS AND ADDITIONAL INFORMATION	REACTOR TAG NUMBER								
								BAPA RST	CARD	STT SPT	RIV	CF												

VS Form 4-54: Brucellosis Test Record: Market Cattle Testing Program

STATE

Enter the name of the State.

SAMPLES DRAWN AT

Mark the appropriate box.

ESTAB. NUMBER

Enter the unique number assigned to each establishment (slaughterhouse or livestock market). You may obtain these numbers from the Veterinary Services area office in your State.

NAME AND ADDRESS OF PLACE WHERE SAMPLES WERE DRAWN

Enter the complete name and mailing address.

CERTIFICATION

Sign the form and enter the date that the samples were drawn.

TESTING LABORATORY

If the blood samples are being sent to a laboratory, leave this block blank; the laboratory will fill it in. If you are collecting the samples at a market and conducting the tests yourself, fill in the information. Enter the name of the laboratory and the address where you are actually conducting the tests.

TEST RESULTS

If the samples are sent to a laboratory, leave this area blank. If you are conducting the tests, enter the results.

TUBE NO.

Self-explanatory.

SALES TAG OR BRAND

Self-explanatory.

BACK TAG NUMBER

Self-explanatory.

EARTAG NUMBER

Self-explanatory.

VACC. TATTOO

List the vaccination tattoo, if present.

AGE

Enter the age in years or months. Indicate which you are using by placing an M or Y after the number.

BREED

Enter the proper breed code.

SEX

Enter M or F.

COUNTY

List the county of origin of the cattle. If unknown, leave blank.

HERD OWNER'S NAME

Self-explanatory.

ADDRESS

Enter the address of the herd owner.

U. S. DEPARTMENT OF AGRICULTURE ANIMAL & PLANT HEALTH INSPECTION SERVICE VETERINARY SERVICES				BRUCELLOSIS TEST RECORD MARKET CATTLE TESTING PROGRAM				STATE	
SAMPLES DRAWN AT ("X" One) ☐ LIVESTOCK MARKETS ☐ SLAUGHTER ESTAB.				ESTAB. NUMBER					
NAME AND ADDRESS OF PLACE WHERE SAMPLES WERE DRAWN				CERTIFICATION I CERTIFY THAT I HAVE COLLECTED AND CORRECTLY IDENTIFIED EACH BLOOD SAMPLE LISTED BELOW.				TESTING LABORATORY	
SIGNATURE DATE				LABORATORY ADDRESS DATE SIGNATURE				TEST RESULTS	
								NEG.	
								SUS	
								REA	
TOTAL									

TUBE NO.	SALES TAG OR BRAND	BACK TAG NUMBER	EAR TAG NUMBER	VACC. TAT. TOO	AGE	BREED	SEX	LABORATORY RESULTS						COUNTY	HERD OWNER'S NAME	ADDRESS
								TEST IN-TERP	O	S	T	R	I			
1																
2																
3																
4																
5																
6																
7																
8																
9																
10																
11																
12																
13																
14																
15																
16																
17																
18																
19																
20																

VS Form 6–22: Tuberculosis Test Record

STATE Enter the State name.

COUNTY

Use Federal Information Processing Standards county code. A list for your State can be obtained from the Veterinary Services area office. If you cannot obtain the county code, leave the box blank. Enter the township or section code if applicable.

HERD OWNER

Enter the complete name and mailing address of the herd owner.

HERD NUMBER

The herd number is assigned by your State. If this is a retest, you should know the number. If this is an initial test, you may not know the number.

LESION, TEST, D-B, and U blocks [Leave blank.]

TOWNSHIP OR DISTRICT

Fill in names of county, township, or district, section, and farm number, as applicable. (Some States have official farm numbers. If this is true in your State, the numbers can be obtained from the Veterinary Services area office in your State.)

REASON FOR TEST

Mark the appropriate box. If you mark OTHER, state the reason.

PREVIOUS TEST DATE

Complete this block only if this is a retest. The Vet Code is assigned by your State.

COMPLETE HERD TEST OF ALL ELIGIBLE ANIMALS

Mark yes or no. Provide the total number of animals in the herd.

KIND OF HERD Mark the appropriate box.

METHOD OF TEST Mark the appropriate box.

SUMMARY

Complete this block after testing. Fill in the number of animals in each category.

CERTIFICATION FOR PAYMENT

Mark the appropriate box.

SIGNATURE, AGREE. CODE

This is a legal document; be sure to sign it. Your agreement code is assigned by your State.

INJECTION, OBSERVATION

List the date and time that the injection was made and the date and time that the test was read (**OBSERVATION**).

REACTORS TAGGED AND BRANDED, AGREE. CODE

Enter the signature and agreement code of the veterinarian tagging and branding any reactors. This person may be different from the one filling out the rest of the form. Include the date of tagging and branding.

ANIMAL CODE

Enter one of the codes listed at the bottom of the column for all appropriate animals.

IDENTIFICATION NUMBER

Record permanent identification, e.g., metal ear tags and tattoos. If more than one is present, record them all. If none is present, apply metal ear tag and record that number.

AGE Record the age in years.

BREED

Use the two-digit breed codes listed in table 3.

SEX Enter M (male), F (female), or N (neuter).

RESULTS

Record the diameter of the indurated area in millimeters in the first column. Record the result of the test in the second column: N (negative) or S (suspect).

REACTOR TAG NUMBER

If reactors are present, record the reactor tag number applied.

DATE, OWNER'S SIGNATURE

Have the owner sign and date the form. Leave part 3 (third sheet of the form) with the owner.

THIS AUTHORIZATION TO TEST EXPIRES

Enter the date. It is determined by each State and may vary depending on the circumstances. Check with your State Veterinarian's office.

After completing the form, send parts 1, 2, and 5 to the State or Veterinary Services area office (check with your State), give part 3 to the owner, and keep part 4 for your records.

STATE	ALL INCOMPLETE RECORDS WILL BE RETURNED FOR COMPLETION COOPERATIVE STATE - FEDERAL TUBERCULOSIS ERADICATION PROGRAM TUBERCULOSIS TEST RECORD					FORM APPROVED OMB NO. 0579-0084 F		
-------	--	--	--	--	--	--	--	--

COUNTY	TWP	SEC	HERD OWNER'S NAME - LAST	FIRST	MI	PREVIOUS TEST DATE	VET CODE	TOTAL	REA	SUS
--------	-----	-----	--------------------------	-------	----	--------------------	----------	-------	-----	-----

HERD NUMBER	HERD OWNER'S COMPLETE ADDRESS					CERTIFICATION FOR PAYMENT ☐ State/Federal Expense ☐ Owner's Expense		DATE LISTED
-------------	-------------------------------	--	--	--	--	--	--	-------------

LESION	TEST	D-B	U
--------	------	-----	---

I certify
That this test was made and read by me on each of the cattle identified below on the dates and with the results as entered in appropriate spaces
That when payment is claimed at program expense in accordance with agreement number below, no payment has been or will be received from any other source

COUNTY	TOWNSHIP OR DISTRICT	SEC.	FARM NO.
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REASON FOR TEST		COMPLETE HERD TEST OF ALL ELIGIBLE ANIMALS		SUMMARY		PRACTITIONER'S SIGNATURE		TELEPHONE NO	
AREA	1	RETEST	5	☐ YES ☐ NO NO ELIGIBLE ANIMALS IN HERD	NEG-ATIVE	PRACTITIONER'S NAME (Please print)		AGREE CODE	
HERD (RE) ACCREDIT	2	TRACING REG. KILL	7	KIND OF HERD ☐ DEER ☐ ELK ☐ CATTLE ☐ BISON ☐ OTHER	SUS-PECT	INJECTION		DATE	HOUR
MILK ORDINANCE	3	TRACING REACTORS	8	METHOD OF TEST ☐ CAUDAL FOLD (CFT) ☐ SNG CERVICAL (CST) (Cervid) ☐ CERVICAL (CT) (Bovine) ☐ OTHER	REAC-TOR	OBSERVATION		DATE	HOUR
SALE-SHOW	4	TRACING EXPOSED	9		TOTAL	REACTORS TAGGED AND BRANDED DATE SIGNATURE		AGREE CODE	
IMPORTED	5	OTHER	10						

1	IDENTIFICATION NUMBER	AGE	BREED	SEX	RESULTS		REACTOR TAG NO	1	IDENTIFICATION NUMBER	AGE	BREED	SEX	RESULTS		REACTOR TAG NO
					SIZE	NRS							SIZE	NRS	
	1								16						
	2								17						
	3								18						
	4								19						
	5								20						
	6								21						
	7								22						
	8								23						
	9								24						
	10								25						
	11								26						
	12								27						
	13								28						
	14								29						
	15								30						

RT - Retag NA - Natural Addition PA - Purchased Addition	N - Negative S - Suspect R - Reactor	I hereby acknowledge receiving a copy of this record which I have examined and find correct DATE OWNER'S SIGNATURE	THIS AUTHORIZATION TO TEST EXPIRES
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U.S. DEPARTMENT OF AGRICULTURE ANIMAL AND PLANT HEALTH INSPECTION SERVICE VETERINARY SERVICES				TUBERCULOSIS INFECTED HERD				INSTRUCTIONS: Prepare at the time of identification of reactors, and attach to VS Form 6-22, Tuberculosis Test Record.			
				☐ BOVINE ☐ CERVINE ☐ OTHER _____							
NAME OF OWNER OF INFECTED HERD				FARM NO.		ADDRESS OF OWNER				OFFICE USE HERD LESION CODE LAB RE-SULTS	
COUNTY				OWNER CLASS (Check one)				DATE TEST READ (Month, day, year)			
				1 FARMER		3 STOCKYARD					
				2 DEALER		4 SALES RING					
SECTION 1 - OTHER ANIMALS ON FARM (Inventory; use continuation sheet if needed)											
LIST SPECIES (Specify e.g. swine, poultry, cervid, llama, antelope, etc.)		CONTACT WITH REACTOR YES NO		NUMBER				NECOPSIED			
				ON THE FARM		TESTED					
SECTION II - IDENTIFICATION AND HISTORY OF REACTORS FOUND ON THIS TEST											
IDENTIFICATION TAG OR TATTOO	REACTOR TAG	AGE	BREED	SEX	ORIGIN OF REACTOR				DESCRIPTION (Registration No., color, markings, etc.)	LESION CODE	LAB RE-SULTS
					1 RAISED ON FARM		3 PURCHASED UNKNOWN SOURCE				
¹ PURCHASE FROM		ADDRESS				OWNER CLASS (Purchased from)				DATE PURCHASED MONTH YEAR	
						1 FARMER		3 STOCK-YARD			
						2 DEALER		4. SALES RING			
² PURCHASE FROM		ADDRESS				OWNER CLASS (Purchased from)				DATE PURCHASED MONTH YEAR	
						1 FARMER		3 STOCK-YARD			
						2 DEALER		4. SALES RING			
³ PURCHASE FROM		ADDRESS				OWNER CLASS (Purchased from)				DATE PURCHASED MONTH YEAR	
						1 FARMER		3 STOCK-YARD			
						2 DEALER		4. SALES RING			
⁴ PURCHASE FROM		ADDRESS				OWNER CLASS (Purchased from)				DATE PURCHASED MONTH YEAR	
						1 FARMER		3 STOCK-YARD			
						2 DEALER		4. SALES RING			
⁵ PURCHASE FROM		ADDRESS				OWNER CLASS (Purchased from)				DATE PURCHASED MONTH YEAR	
						1 FARMER		3 STOCK-YARD			
						2 DEALER		4. SALES RING			

According to the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number. The valid OMB control number for this information collection is 0579-0084. The time required to complete this information collection is estimated to average 3 hours per response, including the time for reviewing instructions, search existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information.

U.S. DEPARTMENT OF AGRICULTURE ANIMAL AND PLANT HEALTH INSPECTION SERVICE VETERINARY SERVICES	TUBERCULOSIS TEST RECORD - CONTINUATION SHEET Complete all entries on VS Form 6-22 before using this form.	HERD NUMBER	PAGE NO.	FORM APPROVED OMB NO. 0579-0084
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HERD OWNER'S NAME - LAST	FIRST	INITIAL	DATE READ	VETERINARIAN
--------------------------	-------	---------	-----------	--------------

1	IDENTIFICATION NUMBER	AGE	BREED	SEX	RESULTS		REACTOR TAG NO	1	IDENTIFICATION NUMBER	AGE	BREED	SEX	RESULTS		REACTOR TAG NO
					SIZE	NRS							SIZE	NRS	
	1								26						
	2								27						
	3								28						
	4								29						
	5								30						
	6								31						
	7								32						
	8								33						
	9								34						
	10								35						
	11								36						
	12								37						
	13								38						
	14								39						
	15								40						
	16								41						
	17								42						
	18								43						
	19								44						
	20								45						
	21								46						
	22								47						
	23								48						
	24								49						
	25								50						

USDA, APHIS, VS

[illegible]

According to the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number. The valid OMB control number for this information is 0579-0084. The time required to complete this information collection is estimated to average 2 hours per responses, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information.

USDA - APHIS - VETERINARY SERVICES

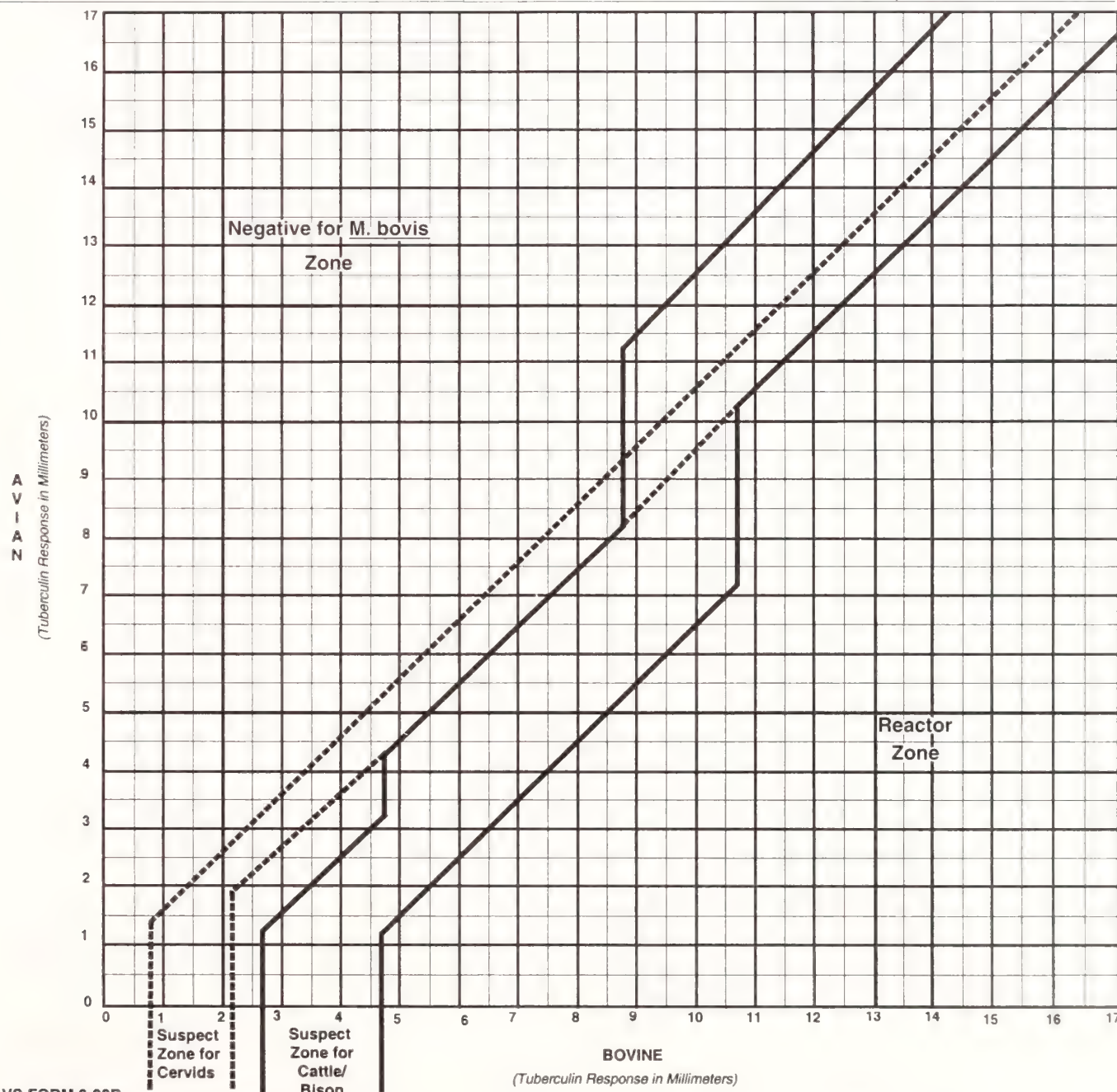
FORM APPROVED -
OMB NO. 0579-0084

COMPARATIVE CERVICAL TUBERCULIN TEST RESULTS ☐ BOVINE ☐ CERVINE OR ☐ OTHER

NAME OF HERD OWNER (Last, First, Middle Initial)

ADDRESS (Including Zip Code)

COMPARATIVE TEST		PRIOR CFT OR SCT		
NUMBER TESTED	DATE INJECTED	NUMBER TESTED	DATE INJECTED	
COMPARATIVE RETEST		NEG. SUS. REA.		
☐ 1ST ☐ 2ND ☐ 3RD				
NAME OF VETERINARIAN		TITLE		DATE



VS Form 10-4: Specimen Submission

If you have only one form to send, fill in 1 of 1. If you used a continuation form, fill in the appropriate numbers, e.g., 1 of 2 or 3 of 6.

NAME OF SUBMITTER, MAILING ADDRESS

Enter your name, address, and telephone number.

NAME OF OWNER/BROKER

Self-explanatory.

LOCATION OF ANIMALS

This information may be different from the owner's address and can become very important in the event of a traceback.

HERD/FLOCK SIZE

Fill in, if applicable.

NO. IN HERD/FLOCK AFFECTED

Enter the number of sick animals.

NO. IN HERD/FLOCK DEAD

Enter the number of dead animals.

EXAMINATIONS REQUESTED

List all tests or procedures you want conducted. May be an "if, then" statement. For example, "If Salmonella is isolated, perform serotype testing."

COLLECTED BY

Enter the name of the person who collected the samples. This person may not be you, the submitter.

DATE COLLECTED

Enter the date that sample was collected.

AUTHORIZED BY

This entry will usually be the Area Veterinarian-in-Charge in your State.

PURPOSE OF SUBMISSION

Mark the appropriate box. Explanations of choices are on the reverse side of part 5 (last sheet of the form).

COUNTRY OF ORIGIN

If test is for import or export, complete this box; if not, leave blank.

REFERRAL NUMBER

The referral number will be provided to you by the Area Veterinarian-in-Charge in your State. All submissions to NVSL must be cleared through the Veterinary Services area office and be assigned a referral number.

PRESERVATION

Mark the appropriate box.

SPECIMENS SUBMITTED

Mark the appropriate box.

TOTAL NUMBER OF SPECIMENS SUBMITTED

Self-explanatory.

SPECIES OR SOURCE

Mark the appropriate box; mark one box only. If you have samples from multiple species, use one form per species.

NUMBER OF ANIMALS SAMPLED

Data in this block and in the "Total Number of Specimens Submitted" block will not be the same if there are multiple specimens per animal. Enter the correct number in each block.

IDENTIFICATION

An explanation and example for this block is on the reverse side of part 5 (last sheet of the form).

ADDITIONAL DATA

List other pertinent information.

SIGNATURE OF SUBMITTER AND DATE

Sign and date the form.

U.S. DEPARTMENT OF AGRICULTURE
ANIMAL AND PLANT HEALTH INSPECTION SERVICE
NATIONAL VETERINARY SERVICES LABORATORIES
P.O. BOX 844, 1800 DAYTON AVENUE
(515) 239-8212
AMES, IOWA 50010

SPECIMEN SUBMISSION

INSTRUCTIONS: Use a separate request for each species and each owner/broker. See reverse for definitions (Item 12) and instructions for Identification (Item 20).

PAGE

OF

1. NAME OF SUBMITTER

2. NAME OF OWNER

MAILING ADDRESS (Street, City, State, and Zip Code)

CITY

STATE

3. LOCATION OF ANIMALS

COUNTY

STATE

Phone No.

FAX No.

4. PAYMENT METHOD ("X" applicable item and provide information)

☐

USER FEE ACCOUNT NO.:

☐

MC/VISA NO.:

EXP.
DATE:☐

CHECK/MONEY ORDER ENCLOSED (Made payable to "USDA" in U.S. Dollars)

5. HERD/FLOCK SIZE

8. EXAMINATIONS REQUESTED

9. COLLECTED BY

6. NO. IN HERD/FLOCK AFFECTED

10. DATE COLLECTED

7. NO. IN HERD/FLOCK DEAD

11. AUTHORIZED BY

12. PURPOSE OF SUBMISSION ("X" one) (See reverse side of Part 3 for definitions)

☐

General Diagnostic

☐

Surveillance

☐

Import

☐Interstate
Movement☐

FAD/EP Diagnostic

☐

Developmental Research

☐

Export

☐

NVSL Intralab Diagnostic

☐

Reagent Evaluation

☐

TB

13. COUNTRY OF ORIGIN

14. REFERRAL NUMBER

15. PRESERVATION ("X" applicable item(s))

☐

None

☐

Ice Pack

☐

Dry Ice

☐

Formalin

☐

Borax

☐

Alcohol

☐

Other (specify)

16. SPECIMENS SUBMITTED ("X" applicable item(s))

☐

Blood

☐

Feces

☐

Parasite

☐

Serum

☐

Tissue

☐

Whole Bird

☐

Other (specify)

☐

Culture

☐

Feed

☐

Plant

☐

Soil

☐

Urine

☐

Fetus

☐

Extract

☐

Milk

☐

Semen

☐

Swab

☐

Water

17. TOTAL NUMBER OF SPECIMENS
SUBMITTED

18. SPECIES OR SOURCE ("X" one)

☐

Cattle

☐

Goat

☐

Environment

☐

Chicken

☐

Bison

☐

Deer

☐

Other (specify)

☐

Swine

☐

Horse

☐

Reagent

☐

Turkey

☐

Dog

☐

Elk

☐☐

Sheep

☐

Donkey

☐

Pet Bird

☐

Cat

☐

Fish

☐

Fish

☐

19. NUMBER OF ANIMALS SAMPLED

20. IDENTIFICATION (See reverse side of Part 5)

IDENTIFICATION (See reverse side of Part 5)

Sample ID	Animal ID/Breed	Age	Sex	Sample ID	Animal ID/Breed	Age	Sex

21. ADDITIONAL DATA (History, clinical signs, post mortem findings, remarks, tentative diagnosis, etc. Use additional sheets if necessary)

22. SIGNATURE OF SUBMITTER AND DATE

NVSL USE ONLY

CONDITION

PRIORITY

DISTRIBUTION

RECEIVED BY

NVSL ACCESSION NO

ITEM 12 - Definitions of Diagnostic Case Categories

- General Diagnostic Case** - A case in which the tests conducted are for the purpose of diagnosing or confirming a domestic disease, and/or the analysis of environmental products that may be contributing to an existing disease condition.
- FAD/EP Diagnostic Case** - A case in which the tests conducted are for the purpose of diagnosing or confirming a foreign disease, or for the eradication of a foreign disease that has gained entrance into the U.S.
- NVSL Intralab Diagnostic Case** - A case in which the tests conducted are for the purpose of diagnosing or confirming a disease condition, analyzing environmental products that may be contributing to a disease condition or for analyzing chemical products for another laboratory of NVSL.
- Surveillance/Monitor Case** - a case in which the tests conducted are for the purpose of monitoring for a specific disease, for a specific insect or insect vector, or for analyzing specific products that are used in treating animals or poultry or for decontamination of animal or poultry facilities.
- Developmental/Research Case** - A case in which the tests conducted are for the purpose of supporting a developmental or research project conducted by another laboratory of NVSL, by staff or field personnel of VS or by other laboratories, institutions, or agencies.
- Reagent Evaluation Case** - A case in which the tests conducted are the purpose of evaluating a reagent produced by another laboratory of NVSL or by other laboratories, institutions, or agencies.
- Import Case** - A case in which the tests conducted are for the purpose of qualifying animals or poultry, including wild animals and birds, or animal or poultry products for importation into the U.S.
- Export Case** - A case in which the tests conducted are for the purpose of qualifying animals or poultry, including wild animals and birds, or animal and poultry products for exportation to a foreign country.
- TB** - A case with a specific request for diagnosis of TB

Item 20 - Identification

Identify Samples with Consecutive Numbers - Record animal identification (number or name) adjacent to appropriate sample number. Laboratory results will be reported by sample identification number. Indicate approximate age in years(y), months(m), weeks(w), or days(d), and indicate sex of each animal. See sample below. When more than 0 samples, use VS Form 10-4A.

IDENTIFICATION		AGE	SEX	IDENTIFICATION		AGE	SEX
Sample	Animal			Sample	Animal		
1	12ABC0000	3y	F	6	12ABC0005	10d	F
2	12ABC0001	2y	M	7	12ABC0006	10m	F
3	ABC002	1y	F	8	12ABC0007	8m	M
4	ABC0003	6m	F	9	12ABC0008	2-1/2y	F
5	12ABC0004	3w	M	10	12ABC0009	15m	M

Send a copy of the VS 10-4 to the Veterinarian-in-Charge (in submitter's State).
Retain a copy for your records.

According to the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMS control number. The valid OMS control number for this information is 0579-0090. The time required to complete this information collection is estimated to average .5 hours per response, including the time to review instructions, search existing data resources, gather the data needed, and complete and review the information collection. If you have any comments concerning the accuracy of the time estimate or suggestions for improving this form, please write to: U.S. Department of Agriculture, Clearance Officer, Stop 7602, 1400 Independence Ave., S.W., Washington, DC 20250-7602.

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VS Form 10–11: Equine Infectious Anemia Laboratory Test

ACCESSION NUMBER

The accession number is assigned by the laboratory.
Leave blank.

DATE BLOOD DRAWN

Self-explanatory. If there are any time constraints on the test (as with exports), they are from the date that the sample is drawn rather than from the date the sample is submitted or the date the test result is reported.

REASON FOR TESTING

Mark the appropriate box.

GEOGRAPHIC INFORMATION SYSTEMS (GIS)

Enter longitude and latitude if applicable.

VETERINARY LICENSE OR ACCREDITATION NO.

Self-explanatory.

TEST TYPE Mark the appropriate box.

NAME AND ADDRESS OF STABLE/MARKET

Enter the name, address, and telephone number of where the horse is stabled or the auction market is located.

NAME AND ADDRESS OF OWNER

Enter the name, complete mailing address, and telephone number of the owner.

NAME AND ADDRESS OF VETERINARIAN

Enter your name, complete mailing address, and telephone number.

CERTIFICATION OF FEDERALLY ACCREDITED VETERINARIAN [blocks 10–12]

Self-explanatory.

CERTIFICATION OF OWNER OR OWNER'S AGENT [blocks 13–15]

Self-explanatory. This section provides the veterinarian legal protection when misrepresentation of a horse is suspected; this is optional and is not required to complete the form.

DATA IDENTIFYING THE ANIMAL BEING TESTED [blocks 16–24]

Fill out as completely as possible. This area can cause the greatest number of problems, especially during

interstate or international movement. The description **MUST** match the horse exactly; therefore, be precise when indicating the markings.

TUBE NUMBER Enter tube number if applicable.

OFFICIAL TAG NUMBER

Enter tag number if applicable.

TATTOO/BRAND

Enter tattoo or brand if applicable.

NAME OF HORSE

Enter the horse's complete name.

COLOR Enter the color of the horse.

BREED Enter the breed of the horse.

ELECTRONIC I.D. NUMBER

Enter the animal's electronic I.D. number if applicable.

AGE OR DOB

Enter the horse's age in years or exact date of birth if available.

SEX

To indicate the sex, use the codes listed on the form.

SHOW ALL SIGNIFICANT MARKINGS, WHORLS, BRANDS, AND SCARS

Fill in the silhouettes as needed to accurately describe the individual animal.

Narrative Description and Remarks [blocks 25–30]

Fill out as completely and precisely as possible. On the reverse side of the top [white] sheet in the carbon pack, you will find narrative descriptions and suggested language for these blocks.

FOR LABORATORY USE ONLY [blocks 31–35]

Leave blank.

U.S. DEPARTMENT OF AGRICULTURE ANIMAL AND PLANT HEALTH INSPECTION SERVICE EQUINE INFECTIOUS ANEMIA LABORATORY TEST (VS Memorandum 555 16)	SERIAL NO.	1. ACCESSION NUMBER	2. DATE BLOOD DRAWN
	I		

Forms Without Adequate Descriptions Of The Horse and Complete Addresses Including Zip Codes, Counties, and Telephone Numbers Will Not Be Processed.

3. REASON FOR TESTING ☐ Market ☐ Change of Ownership ☐ Show ☐ First Test ☐ Retest ☐ Export		7. NAME AND ADDRESS OR STABLE/MARKET (Please print or type)	
4. GEOGRAPHIC INFORMATION SYSTEMS (GIS) LAT: _____ LONG: _____		5. VETERINARY LICENSE OR ACCREDITATION NO. _____ 6. TEST TYPE ☐ ELISA ☐ AGID	
8. NAME AND ADDRESS OF OWNER (Please print or type)		9. NAME AND ADDRESS OF VETERINARIAN (Please print or type)	
Zip Code _____		Zip Code _____	
Tel No. _____		Tel No. _____	
County _____		County _____	

CERTIFICATION OF FEDERALLY ACCREDITED VETERINARIAN

I certify the specimen submitted with this Form was drawn by me from the horse described below on the date indicated above.

10. SIGNATURE OF FEDERALLY ACCREDITED VETERINARIAN	11. TYPE OR PRINT SIGNATURE NAME	12. SIGNATURE DATE
--	----------------------------------	--------------------

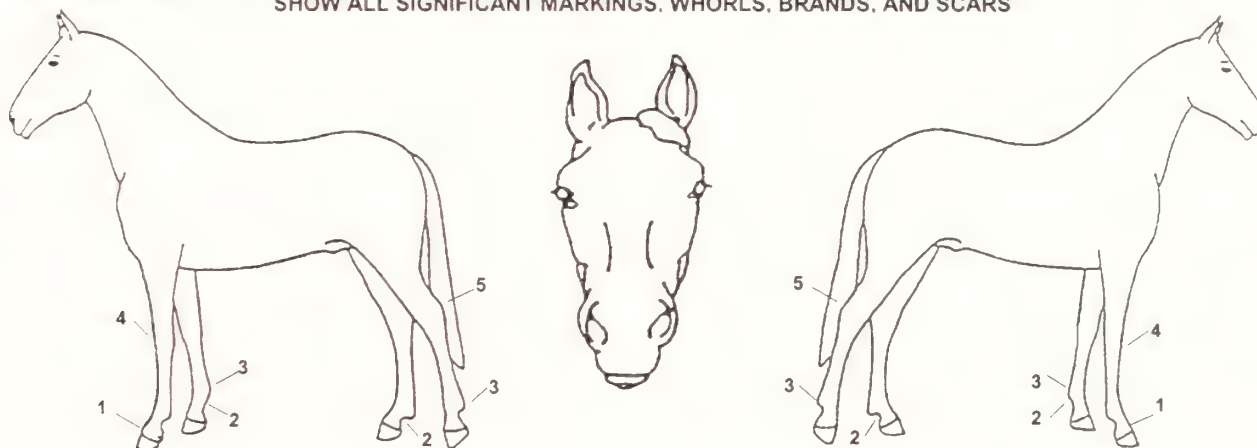
CERTIFICATION OF OWNER OR OWNER'S AGENT

I certify that I have examined this form and, to the best of my knowledge and belief, this form is true, correct and complete.

13. SIGNATURE OF OWNER OR OWNER'S AGENT	14. TYPE OR PRINT SIGNATURE NAME	15. SIGNATURE DATE
---	----------------------------------	--------------------

16. Tube No.	17. Official Tag No.	18. Tattoo/Brand	19. Name of Horse	20. Color	21. Breed	22. Electronic I.D. No.	23. Age or DOB	24. Sex	M - Male F - Female G - Gelding N - Neuter
--------------	----------------------	------------------	-------------------	-----------	-----------	-------------------------	----------------	---------	---

SHOW ALL SIGNIFICANT MARKINGS, WHORLS, BRANDS, AND SCARS



1 - Coronet, 2 - Pastern, 3 - Fetlock, 4 - Knee, 5 - Hock

NARRATIVE DESCRIPTION AND REMARKS

25. HEAD	26. OTHER MARKS AND BRANDS
27. LEFT FORELIMB	28. RIGHT FORELIMB
29. LEFT HINDLIMB	30. RIGHT HINDLIMB

FOR LABORATORY USE ONLY

31. LABORATORY NAME/CITY/STATE	32. DATE RECEIVED	33. DATE REPORTED OUT	34. TEST RESULTS ☐ Negative ☐ Positive ☐ AGID ☐ ELISA
36. SIGNATURE OF TECHNICIAN		35. REMARKS	

Falsification of this form or knowingly using a falsified form is a criminal offense and may result in a fine of not more than \$10,000 or imprisonment for not more than 5 years or both (U.S.C. Section 1001).

VS Form 10–12: Equine Infectious Anemia Supplemental Investigation

CASE ID

Self-explanatory.

LAB ACCESSION NO.

Self-explanatory.

INVESTIGATOR'S NAME

Investigator's name and telephone number.

INVESTIGATOR'S AFFILIATION

Self-explanatory.

INVESTIGATION DATE

Self-explanatory.

OWNER'S LOCATION

Enter complete name, address, and telephone number of the owner's location.

NAME OF CONTACT PERSON

Enter the complete name, address, and telephone number of the local contact person (e.g., the stable manager).

All remaining blocks on this form are self-explanatory.

USE TYPEWRITER OR PRINT CLEARLY				FORM APPROVED - OMB NO. 0579-0127	
U.S. DEPARTMENT OF AGRICULTURE ANIMAL AND PLANT HEALTH INSPECTION SERVICE EQUINE INFECTIOUS ANEMIA SUPPLEMENTAL INVESTIGATION (VS Memorandum 555.8)				1. CASE ID 2. LAB ACCESSION NO.	
3. INVESTIGATOR'S NAME <i>(last, first, & middle initial)</i> Area Code & Telephone No.				4. INVESTIGATOR'S AFFILIATION 5. INVESTIGATION DATE	
6. OWNER'S LOCATION Name Street Address City State Zip Code County Area Code & Telephone No.				7. NAME OF CONTACT PERSON <i>(e.g. stable manager)</i> Contact Name Street Address City State Zip Code County Area Code & Telephone No.	
8. FARM OR RANCH OPERATION					
Type of Operation	Specialty	Acreage	No. of Buildings	Are There Other Adjacent Equine Operations ☐ Yes ☐ No If Yes, Give Number	
9. ANIMAL POPULATIONS					
No. of Equids on Premises		No. of Equids having Possible Contact with Positive Case Animals		No. of Equids Sharing Pasture with Case Animal	
Other Livestock Animals on Premises <i>(list total number by species)</i> Cattle Pigs Sheep Goats Other				Are Wild Equids Present within 200 yards of this Premises ☐ Yes ☐ No If Yes, Give Number	
10. HISTORY OF CASE ANIMAL					
Name		Color		Registration Number	
Breed		Age <i>(in months only)</i>		Sex <i>(male, female, gelding, neuter)</i>	
Primary Use of animal <i>(Please check one box.)</i> ☐ Pleasure ☐ Show ☐ Work ☐ Other <i>(Please Describe)</i>					
11. SOURCE OF ANIMAL					
Was the Animal Born on Owner's Premises ☐ Yes ☐ No If No, Please Give Location Where Born					
Was the Animal Purchased ☐ Yes ☐ No If Yes, Please Give the Seller's Name and the Address Where Animal Resided Prior to Purchase by Current Owner					
How Long Has the Case Animal Been at the Current Site Prior to the EIA Positive Test <i>(in months only)</i>					
12. ANIMAL HOUSING					
Proportion of Time Case Animal Spent In stable (%) ☐ 0 ☐ 25 ☐ 50 ☐ 75 ☐ 100 On pasture (%) ☐ 0 ☐ 25 ☐ 50 ☐ 75 ☐ 100			Type of Stable ☐ Open ☐ Closed		Maintenance ☐ Poor ☐ Good ☐ Moderate
Size of Pasture Area Where Case Animal was Kept <i>(acres)</i> ☐ .24" ☐ 12-24" ☐ 6-12" ☐ <6"		Water Sources on Pasture ☐ None ☐ Well ☐ Irrigation ☐ Stock Pond ☐ Natural Pond ☐ Lake ☐ Stream ☐ Other			
13. TRAVEL HISTORY					
Dates of Off-premises Gathering of Equids Attended by Case Animal within Six Months of the EIA Positive Test		Types of Off-premises Gatherings of Equids Attended by the Case Animal within Six Months of the EIA Positive Test		Was the Case Animal within 200 Yards of Another Animal Known to be EIA-positive within Six Months of the EIA Positive Test ☐ Yes ☐ No ☐ Not Certain IF YES, IDENTIFY PREMISE(S) AND ALL EXPOSED EQUIDS IN COMMENTS SECTION, PAGE 3.	

14. PREMISES INFECTION HISTORY

Date of the First Test Yielding a Positive Response	Date of the Last Negative EIA Test	Are Other Animals with EIA Positive Tests Present on the Premises ☐ Yes ☐ No	Are Other Animals with EIA Positive Tests Present on Neighboring Premises ☐ Yes ☐ No
---	------------------------------------	---	---

List Other Infections Diagnosed on Premises for All Animals within the Past Three Years

15. VACCINATION HISTORY

List Vaccines and Dates Administered to EIA Test-Positive Animal	List Vaccines and Dates Administered to Equids on Premises Other than Those Given to the EIA Test Positive Animal	Who Administered the Vaccines (check all that apply) ☐ Owner ☐ Neighbor ☐ Farm Worker ☐ Veterinarian ☐ Other
--	---	---

16. INJECTABLE MEDICATION HISTORY

List Injectable Medication and Dates Administered to EIA Test Positive Animal	Who Injected the Medication ☐ Owner ☐ Farm Worker ☐ Neighbor ☐ Veterinarian ☐ Other
---	---

17. VETERINARY MEDICAL ACTIVITIES

Other than EIA Testing, were the Services of a Veterinarian Used within the Past Six Months

☐ Yes ☐ No If Yes, Please Indicate the Dates and the Nature of the Services Performed

Were Any of These Services Performed on the EIA-positive Animal ☐ Yes ☐ No If yes, specify

18. FLY CONTROL

Have Fly Control Measures Been Applied within the Past Six Months

☐ Yes ☐ No

If yes, Were the Treatments

Repellents applied to animals ☐ Yes ☐ No

Repellents applied on or near animal housing ☐ Yes ☐ No

Insecticides applied generally to the pasture areas ☐ Yes ☐ No

Insecticides applied in or near animal housing areas ☐ Yes ☐ No

19. ENVIRONMENT SURROUNDING PREMISES

Describe the Area Surrounding the Premises in Ecological Terms

Marsh	Shrubland	Grassland
Swamp	Desert	Coniferous Forest
Upland Deciduous Forest	Flood Plain Deciduous Forest	Other

20. SKETCH OF THE PREMISES RELATIVE TO ROADS, WATER SOURCES, AND LANDMARKS

Site Sketch



(Show in sketch with an X mark where the coordinates were obtained.)

Latitude (ddmmss)	Longitude (ddmmss)	Datum Used, if Known
This Location is ☐ Front gate ☐ Stable ☐ Pasture ☐ Other (please identify)		

[This page intentionally left blank]

VS Form 10–13: Owner/Shipper Certificate: Fitness to Travel to a Slaughter Facility

TIME HORSES LOADED ON CONVEYANCE

Enter the exact time horse(s) was/were loaded onto a truck, tractor, trailer, or semitrailers or any combination of these, propelled or drawn by mechanical power. Indicate time as AM, PM, or Military time.

DATE

The date you are completing this form (day, month, year).

VEHICLE LICENSE NO. AND DRIVER'S NAME

The vehicle license number is the tag number of the conveyance. Enter the name of the person who is actually driving the conveyance.

CONSIGNOR (OWNER/SHIPPER) NAME

Enter the name of any individual, partnership, corporation, or cooperative association that engages in commercial transportation of more than 20 equines per year to slaughtering facilities.

The three blocks immediately below refer to the street address, city/State/ZIP code, and phone number of the owner/shipper.

CITY AND STATE WHERE HORSES WERE LOADED ON CONVEYANCE

Enter the complete city and State where the horse(s) were loaded onto a truck, tractor, trailer, or semitrailer or any combination of these, propelled or drawn by mechanical power.

NAME OF AUCTION/MARKET

If the owner/shipper purchased any horse(s) from an auction or livestock market, provide the name of the facility.

CONSIGNOR (RECEIVER/DESTINATION) NAME

Enter the name of the person and/or slaughter plant that is taking receipt of the Horse(s) at its/their final destination.

The three blocks immediately below refer to the street address, city/State/ZIP code, and phone number of the person and/or slaughter plant receiving the animal(s).

CHECK THE BOX THAT INDICATES . . .

Check all the boxes beside statements that are true for *all* the horses traveling on this certificate.

Identification Section

Fill out as completely as possible. The description **MUST** match each horse exactly; therefore, be precise when recording information.

TAG PREFIX

This information is located on the top of the green equine backtag. The alpha prefix is USAA through ZZ. This prefix **MUST** be recorded as it is part of the backtag number.

Tag NO.

This information is located on the green equine backtag and is a 3- or 4-digit number. This number **MUST** be recorded.

COLOR DESCRIPTION

Of the six possible boxes, check the one that best describes each individual horse.

BREED/TYPE

Check the appropriate box. TB = thoroughbred; QT = quarter horse.

SEX

Check the appropriate box.

BRANDS Tattoos, etc.

Indicate any brands, tattoos, markings, or stars that would aid in identifying the individual horse(s).

REMARKS Include existing conditions

Fill in this section as completely as possible for each animal.

SIGNATURE

The driver of the conveyance signs here, certifying that the horses have been offered food and water and been allowed to rest as required under all applicable Federal laws.

SIGNATURE OF OWNER/SHIPPER

The owner/shipper signs here, certifying that all information on the form is true and correct.

CANADIAN FOOD INSPECTION AGENCY (CFIA)

Leave blank.

**OWNER/SHIPPER CERTIFICATE
FITNESS TO TRAVEL TO A SLAUGHTER FACILITY**
(Please type or print in ink)

According to the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number. The valid OMB control number for this information collection is 0579-0160. The time required to complete this information collection is estimated to average 5 min. per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information.

FORM
APPROVED
OMB NO.
0579-0160

TIME HORSES LOADED ON CONVEYANCE	DATE	CITY AND STATE WHERE HORSES WERE LOADED ON CONVEYANCE
VEHICLE LICENSE NO. AND DRIVER'S NAME	NAME OF AUCTION/MARKET	
CONSIGNOR (OWNER/SHIPPER) NAME	CONSIGNEE (RECEIVER/DESTINATION) NAME	
STREET ADDRESS	STREET ADDRESS	
CITY, STATE, ZIP CODE	CITY, STATE, ZIP CODE	
AREA CODE & TELEPHONE NO.	AREA CODE & TELEPHONE NO.	

CHECK THE BOX THAT INDICATES THE FOLLOWING IS TRUE FOR ALL THE HORSES ON THIS CERTIFICATE

- ☐ Pregnant mares are not likely to foal (give birth) during the trip. ☐ Horses are able to bear weight on all 4 limbs.
☐ Foals are older than 6 months of age. ☐ Horses are not blind in both eyes. ☐ Horses are able to walk unassisted

	TAG PREFIX	Tag NO.	COLOR DESCRIPTION						BREED/TYPE					SEX			BRANDS Tattoos, etc.	REMARKS Include existing conditions
			Bay	Grey	Blk.	Pinto	Chestn	Other	TB	QT	Draft	Pony	Other	Mare	Stal	Geld		
1																		
2																		
3																		
4																		
5																		
6																		
7																		
8																		
9																		
10																		
11																		
12																		
13																		
14																		
15																		

HORSES HAVE HAD ACCESS TO FOOD, WATER, AND REST FOR A MINIMUM OF 6 CONSECUTIVE HOURS IMMEDIATELY BEFORE LOADING INTO CONVEYANCE.

SIGNATURE

I HEREBY AUTHORIZE THE CFIA TO DISCLOSE THIS DOCUMENT AND THE INFORMATION IN IT AS COMPLETED BY THE CFIA OR DGIF TO THE USDA. FALSIFICATION OF THIS FORM OR KNOWINGLY USING A FALSIFIED FORM IS A CRIMINAL OFFENSE AND MAY RESULT IN A FINE OF NOT MORE THAN \$10,000 OR IMPRISONMENT FOR NOT MORE THAN 5 YEARS OR BOTH (18 U.S.C. SECTION 1001).

SIGNATURE OF OWNER/SHIPPER(I certify that the information contained in this form is true and correct to the best of my knowledge.)

CANADIAN FOOD INSPECTION AGENCY (CFIA)

EST _____
DATE _____
TIME _____

**DIRECCION GENERAL DE INSPECCION EN
FRONTERAS (DGIF)**

EST. _____
DATE _____
TIME _____

VS Form 10-13A: Owner/Shipper Certificate: Fitness to Travel to a Slaughter Facility (Continuation Sheet)

This form furnishes additional lines to be filled in only when the number of animals being shipped exceeds 15. Note that the owner/shipper must also sign and date this sheet at the bottom and indicate that it is page 2

of 2. If there are more than 45 horses in this shipment, additional Forms 10-13A may be used, but be sure to renumber the left-hand column, beginning with 46 to account for every animal individually.

**OWNER/SHIPPER CERTIFICATE
FITNESS TO TRAVEL TO A SLAUGHTER FACILITY
(CONTINUATION SHEET)**
(Please type or print in Ink)

According to the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number. The valid OMB control number for this information collection is 0579-0160. The time required to complete this information collection is estimated to average 5 min. per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information.

FORM
APPROVED
OMB NO.
0579-0160

	TAG PREFIX	Tag NO.	COLOR DESCRIPTION						BREED/TYPE					SEX			BRANDS Tattoos, etc	REMARKS Include precondition
			Bay	Grey	Blk.	Pinto	Chestn	Other	TB	QT	Draft	Pony	Other	Mare	Stal	Geld		
16																		
17																		
18																		
19																		
20																		
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42																		
43																		
44																		
45																		

I HEREBY AUTHORIZE THE CFIA TO DISCLOSE THIS DOCUMENT AND THE INFORMATION IN IT AS COMPLETED BY THE CFIA TO THE USDA. FALSIFICATION OF THIS FORM OR KNOWINGLY USING A FALSIFIED FORM IS A CRIMINAL OFFENSE AND MAY RESULT IN A FINE OF NOT MORE THAN \$10,000 OR IMPRISONMENT FOR NOT MORE THAN 5 YEARS OR BOTH (18 U.S.C. SECTION 1001).

SIGNATURE OF OWNER/SHIPPER(I certify that the information contained in this form is true and correct to the best of my knowledge.)

VS Form 17-6: Certificate for Poultry or Hatching Eggs for Export

Note: This form must be typed.

DATE OF SHIPMENT

Self-explanatory.

NAME AND ADDRESS OF EXPORTER

Use the complete name and mailing address of the exporter. The Federal Information Processing Standards (FIPS) State codes may be found on the reverse side of the bottom sheet of the carbon-pack form.

NAME AND ADDRESS OF IMPORTER

Use the complete name and mailing address of the importer. Contact your Veterinary Services area office for information regarding the FIPS country codes.

QUANTITY/UNIT

List eggs by the dozen or hatched poultry by the individual bird.

VARIETY, STRAIN OR TRADE NAME

This information may be obtained from the exporter.

PRODUCT

Use a checkmark or "X" in the block that describes the item or animal.

SEX

Use a checkmark or "X" in the block that describes the animals in each of the Variety/Strain/Trade name groups. "Straight run" means that the sex is unknown (the birds have not been sexed).

TYPE (Intended use)

Determine whether the group of birds on a particular line are commercial production stock, multiplier breeding stock, or primary breeding stock. Then use a checkmark or "X" under the appropriate header to label the group as egg-type, meat-type, or "other."

NPIP APPROVAL

Fill in the appropriate number.

NPIP CLASSIFICATION - U.S.

Use a checkmark or "X" to describe the entire group of birds on a particular line.

TOTAL NUMBER OF UNITS CERTIFIED FOR EXPORT

Add either in dozens for eggs or individual numbers for hatched poultry.

CHECK APPROPRIATE CERTIFICATION BELOW

Check A or B.

REMARKS OR ADDITIONAL INFORMATION

Make additional remarks here if necessary.

TYPED NAME OF ISSUING VETERINARIAN

Self-explanatory.

SIGNATURE OF ISSUING VETERINARIAN

Sign the form only after it is completed.

STATUS

Check the block that best describes your status. This certificate is official only if it is signed by an accredited, State, or Federal veterinarian.

DATE ISSUED

Self-explanatory.

SIGNATURE OF ENDORSING FEDERAL VETERINARIAN

Check with the Federal Area Veterinarian-in-Charge to fulfill this requirement.

DATE ENDORSED

This block is completed only if the Federal Area Veterinarian-in-Charge signed in the preceding block.

No. A

CERTIFICATE FOR POULTRY OR HATCHING EGGS FOR EXPORT

2. NAME & ADDRESS OF EXPORTER (include ZIP code)

3. NAME & ADDRESS OF IMPORTER

FIPS STATE CODE (for USDA use only-see reverse)

FIPS COUNTRY CODE (for USDA use only)

[illegible]

12. CHECK APPROPRIATE CERTIFICATION BELOW (A OR B)

- ☐ **A. Certificate for Hatching Eggs and Newly Hatched Poultry, which have not been fed or watered.** This is to certify that: (1) the flock or flocks and the hatchery or hatcheries from which the above-described hatching eggs or newly hatched poultry originated were inspected by me or another accredited veterinarian within 30 days prior to shipment of above hatching eggs or setting of eggs for above shipment of day old chicks and found free from evidence of communicable diseases and insofar as can be determined have not been exposed to Newcastle disease, fowl plague, fowl typhoid, ornithosis, and pullorum disease; (2) during the usual routine inspection of the flock or flocks there was no visible evidence of communicable diseases observed on the inspection dates listed in item 13 below; (3) the National Poultry Improvement Plan classification is as indicated in item 9 above; and (4) the prospective exporter has been advised that the hatching eggs must be clean and that the shipment must be made in new, clean containers.
- ☐ **B. Certificate for Poultry other than Newly Hatched Poultry Specified in Certificate A.** This is to certify that: (1) on this date all poultry shown in item 5 above, including all other poultry maintained in the flock, were inspected by me on the premises of origin within the past 30 days and found free from evidence of infectious and contagious diseases and insofar as can be determined have not been exposed to Newcastle disease, fowl plague, fowl typhoid, ornithosis, and pullorum disease; and (2) the prospective exporter has been advised that shipment must be made in new containers or clean containers which have been properly cleaned and disinfected.

13. REMARKS OR ADDITIONAL INFORMATION (if needed)

 USDA VETERINARY SEAL <i>(if required)</i>	14. TYPED NAME OF ISSUING VETERINARIAN		
	15. SIGNATURE OF ISSUING VETERINARIAN		
	16. STATUS ☐ 1. State ☐ 2. Federal ☐ 3. Accredited		17. DATE ISSUED Mo Da Yr
	18. SIGNATURE OF ENDORSING FEDERAL VETERINARIAN <i>(if required)</i>		19. DATE ENDORSED Mo Da Yr

TO ACCOMPANY SHIPMENT

General Information and Navigation Hints

Begin by filling out the Consignor [shipper] and Consignee [receiver] information in blocks **1**, **7**, **8**, **12**, **13**, **14**, and **16** (including **DESTINATION COUNTRY** and **ENTER CODE** blocks, which are not numbered themselves). Block-specific instructions follow where appropriate.

Block **2** is not filled in by you; the form comes with a preprinted unique number on it, and we have erased that on purpose here. Block **3** cannot be filled in until you know if you will need to use Form 17–140A, the continuation sheet for Form 17–140.

Next, fill in general information about this health certificate: insert the date on which you are issuing the certificate (block **4**), the location where the shipment is leaving the United States (blocks **5** and **6**), and the shipping method being employed (block **11**).

Indicate whether or not this shipment is of semen (block **9**) and if so, how many doses are being shipped (block **10**).

Determine which nonpoultry **SPECIES** is being shipped (block **15**). Check only **ONE** species and describe all such animals on this Form 17–140. If the shipment includes animals of other species, fill out a separate Form 17–140 for each species and check the appropriate species in block **15** on each form. [If the shipment includes poultry, do not use Form 17–140: use Form 17–6 instead.]

Fill in the **FARM ORIGIN** information (block **17**) as specified on the form itself. Then determine which types of tests you are certifying and complete the blocks on the central and right-hand parts of the form accordingly.

In the **CERTIFICATION BY ISSUING VETERINARIAN** section at the bottom of Form 17–140, you will give information about yourself in blocks **20** and **21**, fill in the total number of animals on all sheets describing this shipment in block **22**, and sign your name in block **25**.

You will type or print the name of the endorsing Federal veterinarian in block **24** and fill in the date he or she endorses this certificate in block **19**. The endorsing Federal veterinarian must sign in block **23**.

Block-by-Block Instructions

PAGE NO. [block 3]

If all animals in this shipment can be described in the space on this form, enter “1 of 1” in block **3**. If not, use Form 17–140A (Continuation Sheet for the United States Origin Health Certificate) to account for all animals being shipped and enter “1 of X” with “X” standing for the total number of forms involved.

DATE ISSUED [block 4]

Enter the date the veterinary inspection is completed.

U.S. PORT OF EMBARKATION [block 5]

Enter the point of loading for export.

STATE CODE [block 6]

The code for the State where the point of embarkation is located. The FIPS State codes are provided on the back of the last page in the carbon-pack for this form.

STATE CODE [block 13]

The code for the State where the consignor [shipper] is located. Again, consult the FIPS State codes listed on the back of the last sheet in the carbon-pack for this form.

UNITED STATES ORIGIN HEALTH CERTIFICATE

(This document does not replace Certificate of Inspection of Export Animals, VS Form 17-27)

17. FARM ORIGIN

Owner's name (Last name, two initials, or business name)

Owner's street address

Owner's city/town, state code (FIPS code on reverse) & zip code

18. INDIVIDUAL IDENTIFICATION

ID NO. OR DESCRIPTION

AGE

SEX

BREED

DATE

TIME

19. DATE ENDORSED

20. NAME OF ISSUING VETERINARIAN (Last name, first name, middle initial, please print)

21. STATUS

22. TOTAL NO OF ANIMALS

23. SIGNATURE OF ENDORSING FEDERAL VET (Type, print, or stamp)

24. NAME OF ENDORSING FEDERAL VET (Type, print, or stamp)

25. SIGNATURE OF ISSUING VETERINARIAN

26. SIGNATURE OF ENDORSING FEDERAL VET (Type, print, or stamp)

27. SIGNATURE OF ISSUING VETERINARIAN

28. SIGNATURE OF ENDORSING FEDERAL VET (Type, print, or stamp)

29. SIGNATURE OF ISSUING VETERINARIAN

30. SIGNATURE OF ENDORSING FEDERAL VET (Type, print, or stamp)

31. SIGNATURE OF ISSUING VETERINARIAN

32. SIGNATURE OF ENDORSING FEDERAL VET (Type, print, or stamp)

33. SIGNATURE OF ISSUING VETERINARIAN

34. SIGNATURE OF ENDORSING FEDERAL VET (Type, print, or stamp)

35. SIGNATURE OF ISSUING VETERINARIAN

36. SIGNATURE OF ENDORSING FEDERAL VET (Type, print, or stamp)

37. SIGNATURE OF ISSUING VETERINARIAN

38. SIGNATURE OF ENDORSING FEDERAL VET (Type, print, or stamp)

39. SIGNATURE OF ISSUING VETERINARIAN

40. SIGNATURE OF ENDORSING FEDERAL VET (Type, print, or stamp)

41. SIGNATURE OF ISSUING VETERINARIAN

42. SIGNATURE OF ENDORSING FEDERAL VET (Type, print, or stamp)

43. SIGNATURE OF ISSUING VETERINARIAN

44. SIGNATURE OF ENDORSING FEDERAL VET (Type, print, or stamp)

45. SIGNATURE OF ISSUING VETERINARIAN

46. SIGNATURE OF ENDORSING FEDERAL VET (Type, print, or stamp)

47. SIGNATURE OF ISSUING VETERINARIAN

48. SIGNATURE OF ENDORSING FEDERAL VET (Type, print, or stamp)

49. SIGNATURE OF ISSUING VETERINARIAN

50. SIGNATURE OF ENDORSING FEDERAL VET (Type, print, or stamp)

VALID ONLY IF USDA VETERINARY SEAL APPEARS HERE

CERTIFICATION BY ISSUING VETERINARIAN
This is to certify that the animals identified above were inspected by me on this date and found to be free from evidence of communicable diseases and insofar as can be determined exposure thereto; the premises of origin are not under Federal or State quarantine because of animal disease; the animals were all negative to the tests shown on the dates indicated. Arrangements have been made for the animals to be handled in a transporting vehicle that has been cleaned and disinfected since last used for livestock and for movement to the port of embarkation without exposure to other animals en route, except those meeting these health requirements. The shipment must be accompanied to the port of export with this certificate.

21. STATUS ☐ 1 State ☐ 2 Federal ☐ 3 Accredited

22. TOTAL NO OF ANIMALS (Certified for export or donated semen) (Include nos. from all attached VS Forms 17-140A)

23. Signature of endorsing federal veterinarian

VS FORM 17-140 (MAR 98)

Previous edition may be used.

VS Form 17–140A: Continuation Sheet for United States Origin Health Certificate

Use this form only when the number of individually identified animals in a shipment exceeds 18, thus overflowing the space available in blocks **17** and **18** of VS Form 17–140.

The name in block **1** of this form is the same as the Consignor's Name in block **1** of the corresponding Form 17–140. Likewise, the Consignee's Name in block **16** of this form is the same as that name in block **16** on the corresponding Form 17–140.

In block **2**, insert the preprinted certificate number from block **2** of the corresponding Form 17–140. Fill in the final page count in block **3** ("2 of X" or "3 of X" with X standing for the total number of forms including all continuation sheets).

The directions for blocks **17** and **18** are the same as for those blocks on the Form 17–140. No signatures are required on these continuation sheets.

APHIS Form 7001: United States Interstate and International Certificate of Health Examination for Small Animals

TYPE OF ANIMAL SHIPPED [block 1]

On this form, you may mix animals of different species. Check all species that apply to the current shipment.

CERTIFICATE NUMBER

Again, this number is preprinted on the official APHIS Form 7001. We have erased the form number for security reasons.

TOTAL NUMBER OF ANIMALS [block 2]

Self-explanatory. The PAGE block directly to the right of block 2 (and itself unnumbered) refers to "Page 1 of X" where X indicates the continuation sheets (APHIS Form 7001A) that are attached with this Form 7001.

NAME, ADDRESS AND TELEPHONE NUMBER OF OWNER/CONSIGNOR [block 3]

Self-explanatory. If the consignor is licensed or registered under the Animal Welfare Act, include his or her official USDA number. Insert his or her telephone number regardless of registration status.

NAME, ADDRESS AND TELEPHONE NUMBER OF CONSIGNEE [block 4]

Insert the shipper's information here, including USDA license or registration number (if applicable) and phone number.

ANIMAL IDENTIFICATION [block 5, lines 1–10 as needed]

The owner or consignor (shipper) fills in this information. The owner or consignor also checks with an X both certification in the unnumbered block below line 10 of block 5 and signs and dates the form below those check-marked blocks.

VACCINATION HISTORY [block 6]

You fill in this section. If rabies certificates are involved, attach them (showing your original signature, not a photocopy) at the black arrow on the right-hand side of the form.

VETERINARY CERTIFICATION [unnumbered block below block 6]

Check the block(s) that apply. Print your name, address and telephone number in the block provided and insert your license number and the name of the State where you received it. Finally, sign at the bottom right and insert the date you examined the animals on this certificate.

ENDORSEMENT FOR INTERNATIONAL EXPORT [unnumbered block at the lower left corner of the form]

If the animals on this shipment are being sent out of the United States, a USDA veterinarian must apply the USDA seal or stamp and sign and date this Form 7001.

U.S. DEPARTMENT OF AGRICULTURE
ANIMAL AND PLANT HEALTH INSPECTION SERVICE

UNITED STATES INTERSTATE AND INTERNATIONAL
CERTIFICATE OF HEALTH EXAMINATION
FOR SMALL ANIMALS

WARNING: Anyone who makes a false, fictitious, or fraudulent statement on this document, or uses such document knowing it to be false, fictitious or fraudulent may be subject to a fine of not more than \$10,000 or imprisonment of not more than 5 years, or both (18 U.S.C. 1001)

1. TYPE OF ANIMAL SHIPPED
☐ Dog ☐ Cat ☐ Other
☐ Nonhuman Primate

CERTIFICATE NUMBER

2. TOTAL NUMBER OF ANIMALS

PAGE

3. NAME, ADDRESS AND TELEPHONE NUMBER OF OWNER/CONSIGNOR

4. NAME, ADDRESS AND TELEPHONE NUMBER OF CONSIGNEE

USDA Licence or Registration No. if applicable

Telephone

USDA Licence or Registration No. if applicable

Telephone

5. ANIMAL IDENTIFICATION (To be completed by owner/consignor)

6. VACCINATION HISTORY (To be completed by veterinarian)

attach original signature
rabies certificate here

COMPLETE USDA TAG COLLAR AND/OR TATTOO NUMBER	BREED - COMMON OR SCIENTIFIC NAME	AGE	SEX	COLOR OR DISTINCTIVE MARKS
(1)				
(2)				
(3)				
(4)				
(5)				
(6)				
(7)				
(8)				
(9)				
(10)				

RABIES ☐ Killed Virus ☐ Live Virus		D.H.L.		OTHER VACCINATIONS TESTS OR TREATMENT	
Date	Product	Date	Product	Date	Type/Result

"X" applicable statements.

☐ OWNER/CONSIGNOR CERTIFICATION: I certify that the information concerning the animals described above in Item 5 is true and correct, and that I am the owner/consignor of such described animals and that I have physical and legal custody of such animals.

☐ I hereby certify that the animal(s) in this shipment is (are), to the best of my knowledge, acclimated to air temperatures lower than 7.2° C. (45° F.).

SIGNATURE

DATE

ENDORSEMENT FOR INTERNATIONAL EXPORT (WARNING: International shipments require certification by an accredited veterinarian. States may also require such certification)

Apply USDA Seal or stamp here

NAME, ADDRESS AND TELEPHONE NUMBER

LICENSE NO

Accredited ☐ Yes ☐ No

LICENSING STATE

Telephone

SIGNATURE

DATE

APHIS Form 7001A: United States Interstate and International Certificate of Health Examination for Small Animals (Continuation Sheet)

CERTIFICATE NUMBER [block 1]

Insert by hand the preprinted number from block 1 of the Form 7001 for which this 7001A is a continuation sheet.

PAGE [block 2]

Insert page 2 (or 3, etc.) of X, with X standing for the total number of sheets of Form 7001 and all 7001A forms for this entire shipment.

NAME, ADDRESS AND TELEPHONE NUMBER OF OWNER/CONSIGNOR [block 3]

Transfer this information from block 3 of the Form 7001. You do not need to repeat the USDA license or registration number. Do repeat the shipper's telephone number, however.

NAME, ADDRESS AND TELEPHONE NUMBER OF CONSIGNEE [block 4]

Transfer this information from block 4 of the Form 7001. You do not need to repeat the USDA license or registration number. Do repeat the recipient's telephone number, however.

ANIMAL IDENTIFICATION [block 5, lines 11–31 as needed]

The owner or consignor (shipper) fills in this information.

VACCINATION HISTORY [block 6]

You fill in this section. If rabies certificates are involved for the animals on this continuation sheet, attach them (showing your original signature, not a photocopy) at the black arrow on the right-hand side of the Form 7001A.

U.S. DEPARTMENT OF AGRICULTURE
ANIMAL AND PLANT HEALTH INSPECTION SERVICE

UNITED STATES INTERSTATE AND INTERNATIONAL CERTIFICATE
OF HEALTH EXAMINATION FOR SMALL ANIMALS

1. CERTIFICATE NUMBER
(Insert certificate no. from page 1)

2. PAGE OF

3. NAME, ADDRESS AND TELEPHONE NUMBER OF OWNER/CONSIGNOR

4. NAME, ADDRESS AND TELEPHONE NUMBER OF CONSIGNEE

5. ANIMAL IDENTIFICATION (To be completed by owner/consignor)

6. VACCINATION HISTORY (To be completed by veterinarian)

attach original signature
rabies certificate here

COMPLETE USDA TAG, COLLAR AND/OR TATTOO NUMBER	BREED - COMMON OR SCIENTIFIC NAME	AGE	SEX	COLOR OR DISTINCTIVE MARKS	RABIES		D-H-L		OTHER VACCINATIONS, TESTS OR TREATMENT		
					☐ Killed Virus	☐ Live Virus	Date	Product	Date	Product	Date
(11)											
(12)											
(13)											
(14)											
(15)											
(16)											
(17)											
(18)											
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(31)											

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- Recommends changes to address trade issues effectively and to align USDA standards and policies with international standards.
- Represents the Deputy Administrator and the Department of Agriculture at meetings with international officials as well as with livestock and poultry industry representatives.

Contact Point for the Sanitary International Standards Team

National Center for Import and Export
Sanitary International Standards Team
USDA–APHIS–VS
4700 River Rd., Unit 33
Riverdale, MD 20737–1231
Tel: (301)734–3577
Fax: (301) 734–8818
e-mail: usa.oie@aphis.usda.gov

CEAH: An OIE Collaborating Center

As an OIE collaborating center, CEAH share their risk analysis and disease surveillance expertise with member countries. It provides them with technical assistance and expert advice on disease surveillance and control and risk analysis.

As a collaborating center, CEAH fulfill the following objectives:

- Reviews, evaluates, and adapts methodologies and approaches to enhance animal disease surveillance systems and the risk analysis process.
- Promotes a harmonized approach to disease surveillance and risk analysis. Provides technical assistance to OIE member countries as needed.
- Improves the quality of animal disease surveillance and risk analysis by establishing a critical mass of trained individuals in OIE member countries.
- Networks with other OIE collaborating centers to coordinate activities.

Contact Point for CEAH

Centers for Epidemiology and Animal Health
USDA–APHIS–VS
2150 Centre Ave., Bldg. B
Fort Collins, CO 80526
Tel: (970) 494–7214
Fax: (970) 472–2668

Center for the Diagnosis of Animal Diseases and Vaccine Evaluation for the Americas: An OIE Collaborating Center

The Center for the Diagnosis of Animal Diseases and Vaccine Evaluation for the Americas consists of three components: NVSL, the Center for Veterinary Biologics (CVB), and the Institute for International Cooperation in Animal Biologics (IICAB).

NVSL are full-service laboratories that have expertise in all of the diagnostic tests for significant animal diseases found in the Americas. These laboratories are committed to sharing and harmonizing these procedures with other countries in the Americas. The NVSL support the OIE by

- Providing diagnostic assistance such as agent isolation and characterization;
- Supplying reference reagents to other laboratories, which can be used to standardize testing or for routine diagnosis;
- Evaluating diagnostic reagents used by other countries and exchanging sera to standardize and harmonize testing;
- Providing training in the diagnostic tests that they perform
- Consulting on a wide range of techniques; and
- Conducting developmental projects to improve diagnostic techniques for diseases of significance in the Americas.

CVB is the sole confirmatory and investigatory testing laboratory involved in regulation of commercial

veterinary biologics (vaccines and diagnostic kits) in the United States. CVB supports OIE by

- Developing, distributing, and using worldwide standard protocols for biologics evaluation and training scientists from throughout the world in these protocols;
- Validating and providing standard reagents to biologics manufacturers and regulatory laboratories worldwide;
- Conducting developmental projects to improve biological techniques for diseases of significance in the Americas;
- Reviewing, developing, comparing, and harmonizing testing protocols in collaboration with industry and other Government laboratories; and
- Hosting scientific meetings in the area of veterinary biologics.

IICAB is based at Iowa State University and concentrates its efforts on education and implementation of international communication and harmonization activities related to the availability, safety, and efficacy of veterinary biologics. IICAB supports OIE by

- Offering training on scientific principles behind vaccine safety and efficacy;
- Working with other international organizations to harmonize regulations for veterinary biologics in the Americas;
- Assisting developing countries to obtain veterinary biologics for specific unmet needs and in their efforts to manufacture, import, and regulate veterinary biologics and diagnostics; and
- Organizing scientific meetings and serving as an international resource for information on the use of veterinary biologics.

Contact Points for the Center for the Diagnosis of Animal Diseases and Vaccine Evaluation for the Americas

National Veterinary Services Laboratories

USDA-APHIS-VS

P.O. Box 844

Ames, IA 50010

Tel: (515) 663-7266

Fax: (515) 663-7397

e-mail: NVSL_Concerns@aphis.usda.gov

Center for Veterinary Biologics

USDA-APHIS-VS

510 S. 17th St.

Ames, IA 50010

Tel: (515) 663-7331

Fax: (515) 663-7673

e-mail: cvb@aphis.usda.gov

Institute for International Cooperation in Animal Biologics

College of Veterinary Medicine

Iowa State University

Ames, IA 50010

Tel: (515) 294-1850

Fax: (515) 294-8259

e-mail: iicab@iastate.edu

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Appendix F—Web Sites

The following Web sites may assist you in fulfilling your duties as an accredited veterinarian:

<http://www.usda.gov>

— The U.S. Department of Agriculture

<http://www.aphis.usda.gov>

— The Animal and Plant Health Inspection Service

<http://www.aphis.usda.gov/vs>

— Veterinary Services

<http://www.aphis.usda.gov/vs/nvap>

— The National Veterinary Accreditation Program

Addresses and phone numbers of the Area Veterinarians-in-Charge and the State animal health officials can be accessed through this site as well as information about the program, including an online form to update your address information for the APHIS accredited veterinarian database.

<http://www.aphis.usda.gov/vs/naahps>

— The National Center for Animal Health Programs

The site includes information about the various disease programs such as brucellosis, tuberculosis, equine infectious anemia, scrapie, Johne's disease, pseudorabies, and chronic wasting disease.

<http://www.aphis.usda.gov/vs/ncie>

— The National Center for Import and Export

The site includes, but is not limited to, information about animal import and export ports, animal products that do not require an import permit, country disease

status, international animal export regulations, international animal product export regulations, and State animal import regulations.

<http://www.gpo.gov/nara/cfr/cfr-table-search.html#page1>

— Code of Federal Regulations

<http://www.aphis.usda.gov/lpa/issues/bse/bse-overview.html>

— BSE information

<http://www.dhs.gov/dhspublic/>

— U.S. Department of Homeland Security

<http://www.cdc.gov/ncidod/dq/animal.htm>

— Centers for Disease Control and Prevention (importation of pets)

<http://laws.fws.gov>

— U.S. Fish and Wildlife Service

<http://www.cbp.gov>

— U.S. Customs and Border Patrol

<http://www.avma.org>

— The American Veterinary Medical Association

http://www.oie.int/eng/en_index.htm

— Office International des Epizooties

<http://www.usaha.org>

— The United States Animal Health Association

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